

# CTO

THE MAGAZINE FOR INFORMATION EXECUTIVES

JULY 1994

VOLUME SEVEN NUMBER EIGHTEEN

SEVEN DOLLARS

SPECIAL ISSUE

## Shelf Life

*How IT Helps  
Retailers Inflate Their  
Bottom Lines*



Panorami  
snorkel  
• Marina D

The Sharper Image's  
Vince Barriero  
Dry snorkel  
valve keeps water out  
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CEO, SAP America, Inc.

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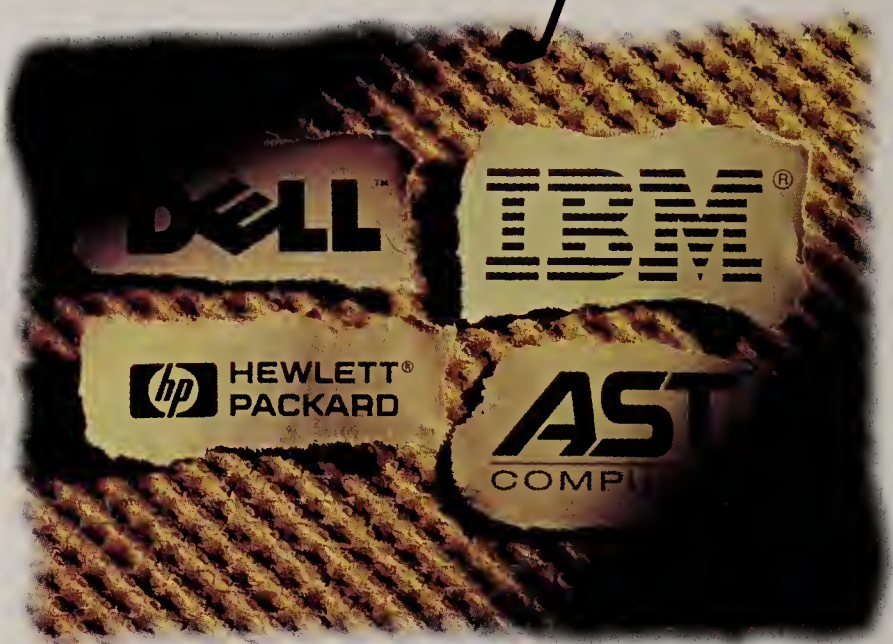


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# CIO

VOLUME 7, NUMBER 18



## SPECIAL ISSUE

### CUSTOMER LOYALTY

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#### Keeping Them In the Loop

In a world where nothing can be taken for granted, the hearts, minds and wallets of customers are perpetually up for grabs. In retailing, IT is the Velcro that can keep them from getting away. *By Peter Cassidy*

### DISTRIBUTION

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#### Changing Channels

There's a new TV generation on the rise, and that's the increasing number of retailers that use television to sell their wares. Currently the fastest-growing retail channel, video shopping is expected to really take off when things go interactive. Retailers that hope to be ready are taking steps now—and embracing a whole new kind of IT. *By David H. Freedman*



The new tube stakes 44  
Cover photo by Cindy Charles

### DECISION SUPPORT

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#### Minding Your Business

Retail decisions can be pared down to getting the right merchandise into the right place at the right time and price. It's slicing through the layers of data needed to make these decisions that's the problem. *By Richard Pastore*

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#### Cataloging In

The doyenne of highly eclectic catalog retailing has risen to prominence on the strength of her nearly flawless instincts—what she calls a “golden gut.” But she concedes that IT has become an indispensable backup for even the most finely honed instincts. *By Carol Hildebrand*

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An index of all major articles published in CIO from January through June 1994, including a cross-reference by article type.



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mailbox  
thinking  
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MORE ►►►







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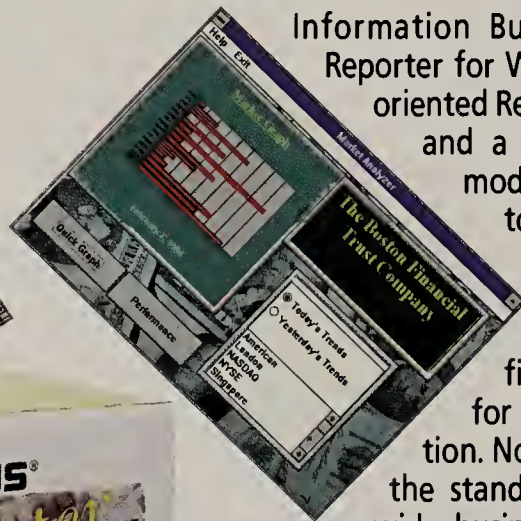
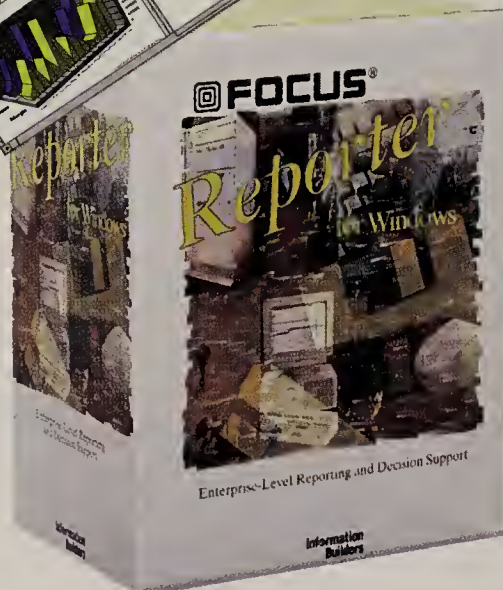
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## COLUMNS

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If the sales clerks at some supposedly customer-focused retailers were to finish the following statement—the customer is always (blank)—some of the responses might not be printable. *By Richard Pastore*

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Thanks to better targeting techniques and closer integration with the whole customer-interaction process, a new crop of telemarketing tools is helping companies make the most of their phones. *By Tracy Mayor*

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Cultural misunderstandings can diminish the ability of U.S. and Japanese businesspeople to work together. Learning some basics could help prevent embarrassing and potentially damaging faux pas. *By Anne Stuart*

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#### WORKING SMART: TO CATCH A THIEF

Decision-support technology is helping this pharmacy chain detect and prevent the theft of millions of dollars' worth of prescription drugs. *By Richard Pastore*

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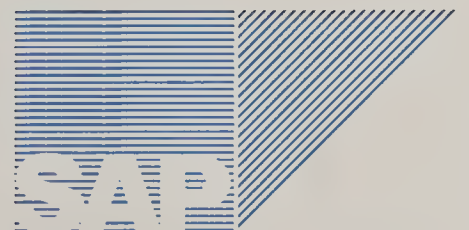




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As part of our continuing focus on how industries are adapting to competitive pressures, this month *CIO* looks at change in retailing and the role IT plays in bringing it about.

Consumers increasingly want to feel in control of the shopping experience—whether this means evaluating home renovations suggested by a computer-based modeling service, participating in frequent-shopper clubs or just knowing that an item is in stock. Retailers must be adept at retrieving, integrating and providing information from their outlets and suppliers.

Operating under the premise that consumers are suffering from “time poverty,” many companies are exploring video shopping as a new frontier. Contributing Writer David H. Freedman examines the video shopping phenomenon, noting that information executives in this market will be called upon to provide services above and beyond such current offerings as overnight shipping and inventory replenishment (please see “Changing Channels,” beginning on Page 44). Unfortunately, many companies do not have the IT infrastructure to support these new endeavors. Some are considering outsourcing certain tasks—such as order taking—to one of a growing number of video shopping service providers.

The video shopping market will explode when interactive services take hold. Customers don’t want to sit in front of a screen and wait until an item they are interested in is offered. They want to be able to see and learn about the specific products they are interested in on demand.

Behind the scenes, decision-support tools are helping retailers gain deeper insights into customer preferences and create finely honed niches for target marketing. In his article “Minding Your Business,” beginning on Page 54, Senior Editor Richard Pastore explores the options available to retailers today.

Despite all this electronic innovation, some of us still enjoy a trip to that old hardware store with the creaky wooden floor. And many customers don’t necessarily want to be niched to death by marketers. There are boundaries to draw in creating the new retail landscape. Hopefully, customers, now used to being courted, will provide signals about where those boundaries should exist. One thing is certain: The plugged-in retail environment will continue to offer more options.

*Marcia Blumenthal*



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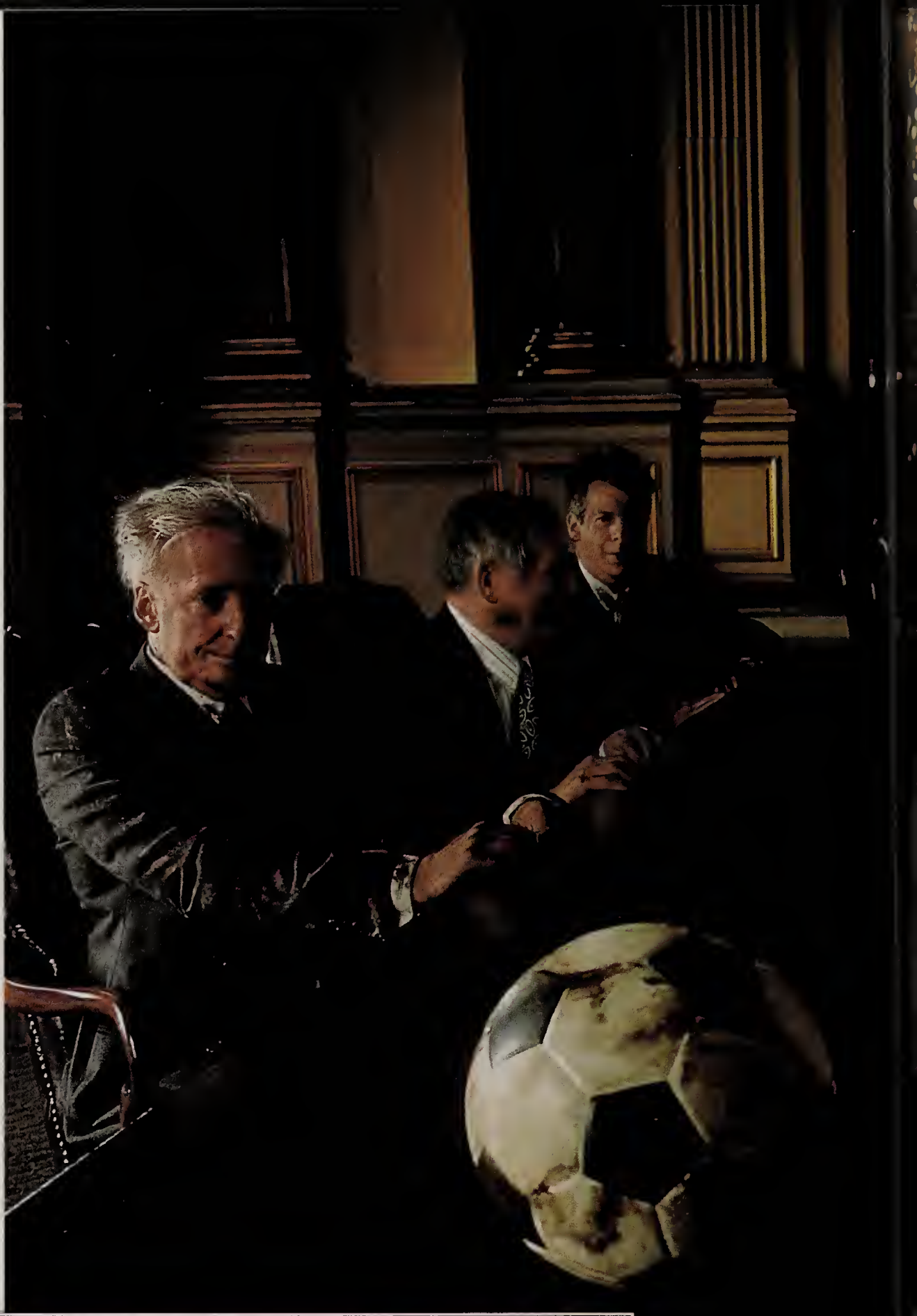
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*"The corporate [retail] entity that controls the consumer-behavior database will be the winner in the next millennium."*

—David A. Cole  
Chairman

Kurt Salmon Associates

Point-of-sale systems, scanning and data-collection equipment, database programs, decision-support systems, distributed computing, neural networks, telecommunications products. These are just a few of the technologies that will catapult retailers beyond the information age into a new world

of "informed" marketing.

Retailers are turning to technology in droves to better leverage marketing and promotional programs. Getting closer to the customer by using the information captured by these technologies could mean increased inventory turnover, fewer markdowns and improved productivity. The bottom line: bigger profits.

As inventory managers and merchandise buyers grow more reliant on decision-support and data-collection systems, vendors must provide systems that not only have the ability to collect scads of data but also can analyze and draw conclusions about buying habits and trends. What makes this so exciting is that retailing, which historically has depended on "gut" decision making, now has the data at its fingertips to make merchandise buying a real science. Those that learn how to read and understand the data and turn it into effective, powerful practices will be the new champions.

*Walter L. Wertz*

P.S. Mark your calendar for the October 1994 Perspectives conference. Jim Wetherbe will act as "master of ceremonies" as we explore "IT Economics: Business Value & Profit Maximization." The conference will take place Oct. 23-26 at La Paloma in Tucson, Ariz. Please call our toll-free conference hot line at 800 366-0246.

# Coming In CIO

## Special Issue: The CIO-100

In our seventh annual CIO-100 issue, we will examine organizations that are exemplars of 21st-century management. Given that "there may be no long-term sustainable advantage to companies except the ability to organize and manage," according to Edward E. Lawler, director of the Center for Effective Organizations at the University of Southern California, we will honor companies that are pushing the management envelope. Big or small, these companies are reengineered, fast, flat, nimble and close to their customers, and their employees are empowered knowledge workers. These are learning organizations—the new, the hip, the future.

The paradigm these companies represent involves dramatic change in virtually every aspect of the corporation, including the nature of work, relationships, products and information. As part of this special issue, *CIO* will examine the shifts in these four central areas, including a look at what reengineered jobs really mean to people at every level of the organization; how virtual relationships are being forged, and at what cost; customers' new voice in defining products; and how conversation and learning are becoming key to disseminating information.

In short, we'll discuss what it means to be part of management's new world order.





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# TRENDLINES

## THE REFUGEE CRISIS

### A MORE PERFECT REUNION

**W**hile international diplomats were abandoning hope of ever reuniting a shattered Yugoslavia, an American high-technology company was figuring out how to reunite the families fractured by the conflict.

In December 1992, staff members at the Document Processing Services (DPS) division at EDS Corp. began discussing the refugee crisis



in the former Yugoslavia and what the company could do to help. They found that one of the most pressing concerns was the tens of thousands of children who had been separated from their

parents and scattered throughout the world. The numbers were particularly high from Bosnia and Herzegovina, where parents in besieged areas were putting children onto buses and oth-

er outbound vehicles to get them out of harm's way. Many of these parents were also displaced by the war, making it even harder for family members to find one another again.

The EDS employees hit upon the idea of using image-processing technology to help reunite the families. Their solution was to gather, digitize and program onto CDs information about children under the care of various relief agencies and then send those CDs out to refugee centers where families could use them to search for lost relatives.

The United Nations High Commissioner for Refugees (UNHCR) soon signed onto

## FILM SCHOOL

**W**ho says television isn't educational? After a few years of exposure to American programming, many immigrants can swear as proficiently as the cops on *NYPD Blue* and emote about their love lives in the melodramatic verbiage of

*Days of Our Lives*. Recognizing this power of popular culture, HRB Systems of Linthicum, Md., has developed ESL 2000, a multimedia learning tool that uses commercial movies to teach English as a second language.

Running on color PCs equipped with

either a laserdisc or CD-ROM,

ESL 2000 will enable users to

interact with films such as

*The Graduate*, *Sister Act*, *The*

*Way We Were*, *Murphy's*

*Romance* and *The Firm*

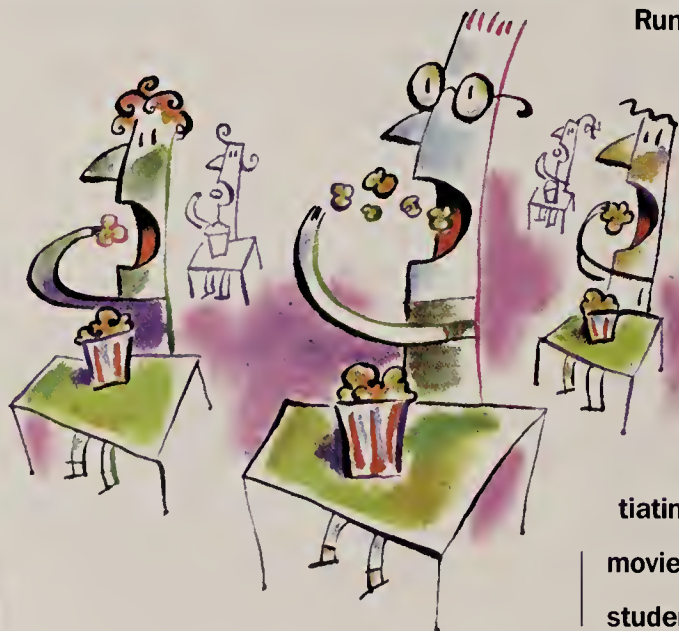
through menu-driven screens.

(The company is currently nego-

tiating the rights to use these and other movies.) Using a mouse or pointing device, students can replay particular scenes,

translate scripts, check their own comprehension and look up words in the online dictionary. The software features more than 200 notes on grammar and contemporary usage, as well as background on cultural, political and historical aspects of the films.

The curriculum, which also includes workbooks and classroom-instruction material, will be licensed to schools, universities and businesses. In addition, HRB will offer ESL 2000 through cultural learning centers established through international and domestic joint ventures. A one-year license is \$8,000 per workstation; subsequent years cost \$3,500. Individual movies and accompanying material cost \$400. Call 410 850-7890. ■

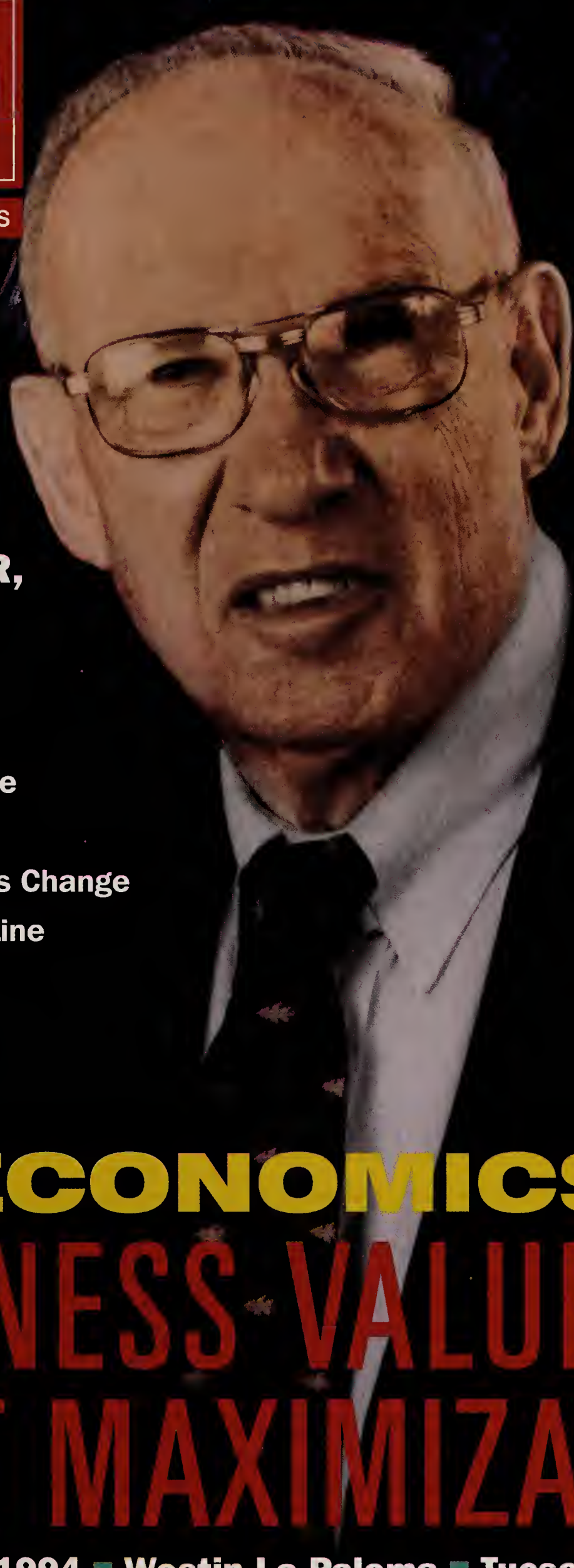




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The traditional business formulas used in technology assessment and reporting are becoming harder to define, as IT is no longer a supporting function but rather an embedded part of an organization's infrastructure. The new metrics must reflect value versus cost and create an even more complex role for CIOs. CIOs must not only measure systems and information value versus functional effectiveness; they must also demonstrate how the economics of IT support a higher enterprise ROI.

At the same time, as Peter Drucker, Clarke Professor of Social Science & Management, Claremont Graduate School says, even the most local businesses will increasingly operate in a world economy. The structure and strategy of the organization must therefore adapt or be out of sync with business value. *IT Economics* will tackle these tough issues and explore the consequences of ignoring Drucker's counsel.

CIOs must be able to:

- Use the best practices for techniques and technologies;
- Partner to deliver value;
- Shift from an internal to external focus;
- Manage technology as a business;

- Develop an internal marketing plan;
- Manage global process change;
- Motivate and be motivated and become a corporate athlete; and
- Leverage the growing and permanent diversity of workers.

Jim Wetherbe, Director, MIS Research Center, University of Minnesota, and Federal Express Professor of Excellence & Director, Center for Cycle Time Research, University of Memphis, will moderate the program and set the stage for our discussions.

In a variety of settings, senior CIOs, CEOs and other industry experts will show you how to adapt technology investment assessments to reflect the linkage between IT expenditures and improved enterprisewide profitability.

Join your peers...the leaders in information technology...and a select group of luminaries in Tucson. You will see a wide range of IT solutions and technologies, such as database management, distributed enterprisewide computing, videoconferencing, workgroup computing, management consulting, re-engineering, outsourcing, process management, data communications, microprocessors and much more.

## COMPANION PROGRAM

Participation in the companion program includes all scheduled receptions, meals and entertainment. Companions must be enrolled in the program for involvement in any conference-related activities. Does not include conference session attendance.



### ATTIRE

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## GOLF & TENNIS

Play golf on the 27-hole Jack Nicklaus Signature golf course surrounding the resort. The course has been named one of the "Top 75 Resort Courses" in the country by *Golf Digest*.

The Westin La Paloma has twelve tennis courts of which ten are lighted, four are clay, and all are superb.





## Sunday, October 23

**Conference Registration**

**Welcome Reception**

**Hospitality/Networking**

## Monday, October 24

**Breakfast**

**Welcome & Opening Remarks**

Joseph L. Levy  
President & Publisher  
*CIO Publishing, Inc.*

**Improving IT Economics:  
Best Practices Makes Perfect**

Dr. Jim Wetherbe  
Conference Moderator  
Director, MIS Research Center  
*University of Minnesota*  
Federal Express Professor of Excellence &  
Director, Center for Cycle Time Research  
*University of Memphis*

**Gearing Up the Bottom Line through IT**

Arnold P. Cohen  
Chairman & CEO  
*London Fog Corporation*

**Delivering Business Value:  
The Next Generation**

Cinda A. Hallman  
Vice President, Information Systems  
*E.I. DuPont de Nemours & Company*

**Managing Technology as a Business**

Dominick J. Landi  
Managing Director, Technology  
Production Services  
*J.P. Morgan*

**Luncheon**

**Small Group Discussions,  
Networking & Recreation**

**Reception**

**Dinner**

## Tuesday, October 25

**Breakfast**

**Critical Success Factors in Managing  
Global Process Change**

William E. Johnston  
Director, Corporate Financial  
Systems Development  
*United Technologies*

Phillip LaChapelle  
Controller  
*Otis Elevator Corporation*

**Technology Leadership:  
One CEO's Commitment to IT**

Jim Maxmin  
Former Chairman  
*Laura Ashley Holdings, Plc.*

**Repositioning IT to Demonstrate  
Business Value**

David MacPherson  
Vice President & CIO  
*Del Monte Foods*

**Concurrent Sessions**

*Each Corporate Host will deliver a concurrent session presentation on a specific application or relevant topic.*

**Luncheon**

**Concurrent Sessions**

*Each Corporate Host will deliver a concurrent session presentation on a specific application or relevant topic.*

**The Future of the Corporation**

Peter F. Drucker  
Clarke Professor of Social Science &  
Management  
*Claremont Graduate School*

**Reception with Professor Drucker**

## Wednesday, October 26

**Breakfast**

**Building the IT Charter through  
Internal Marketing**

L. Paul Ouellette  
CEO  
*Ouellette & Associates*

**Measuring the Business Value of IT**

Akram Yosri  
Information Technologies Institute  
*New York University*

**Leveraging Diversity as a Competitive  
Business Strategy**

Hattie Hill-Storks  
CEO  
*International Productivity Institute (IPI)*

**Mentally Tough: The Corporate Athlete**

Dr. Jack L. Groppel  
Executive Vice President  
*LGE Sport Science Center*

**Summary**



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**TEXAS INSTRUMENTS**





## IT Economics: Business Value & Profit Maximization

Sunday, October 23–Wednesday, October 26, 1994

Westin La Paloma ■ Tucson, Arizona

Please print and complete this form in its entirety, then forward to the attention of Elizabeth Blais. **Fax** to 508-879-7720. **Call** us at 800-366-0246. **Mail** to: CIO Publishing, Inc., 492 Old Connecticut Path, Framingham, MA 01701.

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NAME OF COMPANION (IF PARTICIPATING IN COMPANION PROGRAM) \_\_\_\_\_

Please copy enrollment form for additional registrations.

### ENROLLMENT FEE

#### ☐ IS Practitioners/Executives

If you are a CIO, IS executive or hold another executive position, the fee is **\$1,395**.

#### ☐ Government/Military

The fee, which includes your hotel for three nights is **\$1,695**.

#### ☐ Sales/Marketing/Consulting

If you hold a sales, marketing or consulting position, the enrollment fee is **\$5,000**. CIO will make the final determination of this category.

### OTHER ACTIVITIES

Monday afternoon activities include:

- ☐ Golf Tournament: \$126  
Golf must be prepaid.  
Club Rental: \$25 ☐ Right ☐ Left
- ☐ Tennis Tournament  
(Complimentary)
- ☐ Colossal Cave: \$32  
(Optional)

#### ☐ COMPANION PROGRAM (\$195)

Companions must be enrolled in this program to attend any conference-related functions. Includes all scheduled meals, entertainment and companion get acquainted breakfast. Conference session attendance not included.

### PAYMENT INFORMATION

☐ Check enclosed ☐ Bill company

☐ P.O. # \_\_\_\_\_

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Signature: \_\_\_\_\_

CIO reserves the right to decline enrollment to any registrant.

Attach  
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### ATTIRE

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### HOTEL ACCOMMODATIONS

A block of rooms has been reserved at the Westin La Paloma. We urge you to make your reservations early by calling the hotel at 800-876-3783. Be sure to identify yourself as part of the CIO conference to receive the conference rate. Please make your reservations early. All unreserved rooms will be released on 9/23/94. Hotel reservations/cancellations and charges are your responsibility. CIO will make hotel reservations for government/military participants.

### TRANSPORTATION

American Airlines is the official conference carrier. Call American at 800-433-1790 and reference Star File #S0404D5. AVIS is the official car rental provider. Call AVIS at 800-331-1600 and reference B291108. Shuttle bus transportation is available from Tucson airport.

### ENROLLMENT FEES

All enrollment fees must be paid in advance of the meeting. Fee includes conference sessions, concurrent sessions, corporate host displays, conference materials and scheduled meals. Transportation and hotel are your responsibility.

### CANCELLATION

You may cancel your enrollment up to 10/14/94 without penalty. No refund or credit will be given for cancellations received after 10/14/94. You may send a substitute in your place.



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**TEXAS  
INSTRUMENTS**

October 23-26, 1994

Westin La Paloma

Tucson, Arizona

**PETER DRUCKER**

# **IT ECONOMICS: BUSINESS VALUE & PROFIT MAXIMIZATION**

**Jim Wetherbe**  
*Moderator*

**Cinda Hallman**  
*E.I. DuPont de  
Nemours*

**Arnie Cohen**  
*London Fog*

**Dave McPherson**  
*Del Monte Foods*

**Jim Maxmin**  
*Laura Ashley  
Holdings*

**Dom Landi**  
*J.P. Morgan*

**Bill Johnston**  
*United  
Technologies*

**Phil LaChapelle**  
*Otis Elevator*

**...and more**

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*(for enrollment information)*



# TRENDLINES

the project, followed by Bull Worldwide Information Systems, which supplied the hardware. Project reUNite was officially launched last spring and at press time was in the process of registering children. Local aid organizations are completing data sheets on the minors in their custody and dispatching the forms—with photos attached—to the UNHCR in Geneva, which validates them and passes them along to EDS in Paris. At EDS, the children's photographs are scanned and the information from the forms recorded in an Oracle database; the data is then indexed, retrieved

and sent to an EDS facility in Detroit, where it is copied onto CD-ROM. From there it goes out to more than 200 UNHCR locations, where trained personnel, using portable computers, will help parents search the database using parameters like name, age and date of birth. Because many of the children are too young to supply this data themselves, information such as nicknames and hair and eye color are also included. (For security reasons, CDs will reveal only the names of agencies responsible for children rather than the minors' exact locations. Parents will be put

in touch with the appropriate agency, which will conduct investigations before releasing a child.)

Reunions are expected to begin around mid-summer, according to the UNHCR. At that time, reUNite will be trying to match approximately 50,000 children with their parents.

"Operation reUNite is a natural extension of EDS's capabilities," says Sharad Sheth, divisional manager of DPS. "It is both exciting and fulfilling to see our core competencies—processes, people and technology—being applied to a global humanitarian effort." ■

## FOOD FOR THOUGHT

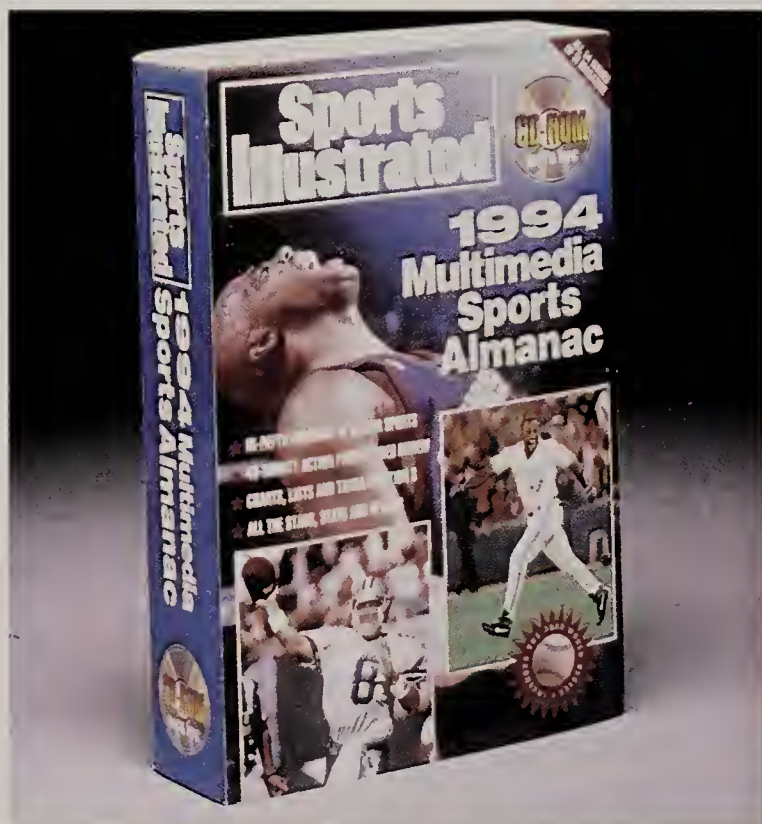
In the grocery business it seems freshness is considered imperative in everything but IS. A recent survey of leading grocery manufacturers suggests that the industry's information systems are rapidly becoming obsolete and contribute little to the customer.

According to the survey of 42 companies, conducted for the Grocery Manufacturers of America by A.T. Kearney Inc., much of the industry's IT infrastructure is 10 to 20 years old and focused on internal reporting and accounting processes. "Grocery manufacturers must move quickly to get their [IT] house in order so they can deal effectively with...changing consumer needs, increasing customer demands, global competition and industry overcapacity," says Kearney principal Richard L. Miskewicz.

The survey also pointed out these problems:

- Most CIOs surveyed control less than half of their companies' IT resources. Thousands of users companywide are developing and maintaining databases and applications without standards to ensure the integrity and integration of results. Meanwhile, PCs have led to massive duplication and an investment of considerable professional time in learning applications.

- Seventy percent of the companies surveyed are using electronic data interchange to some degree with their customers, but only 26 percent of possible transactions are being conducted in this way, and plans call for only 20 percent more in the next three years. Use of EDI links with vendors and



The new CD-ROM from StarPress Multimedia Inc. offers plenty of text and photos, including 54 issues of *Sports Illustrated* magazine and 1,200 pages of team and individual records and statistics. There's also a sports-trivia game featuring hundreds of questions on football, baseball and basketball. But the new technology really gets a workout in more than 40 minutes of full-color video clips. Users can watch Michael Jordan lead the Bulls to their third world championship and New York Jets player Dennis Byrd's triumphant return to the gridiron after having been paralyzed 10 months earlier.

The video segments, produced by HBO Sports, include highlights from most of last year's major sporting events.

The CD-ROM is available for Macintosh and Windows, with a suggested retail price of \$59.95. For more information, call 415 274-8383. ■

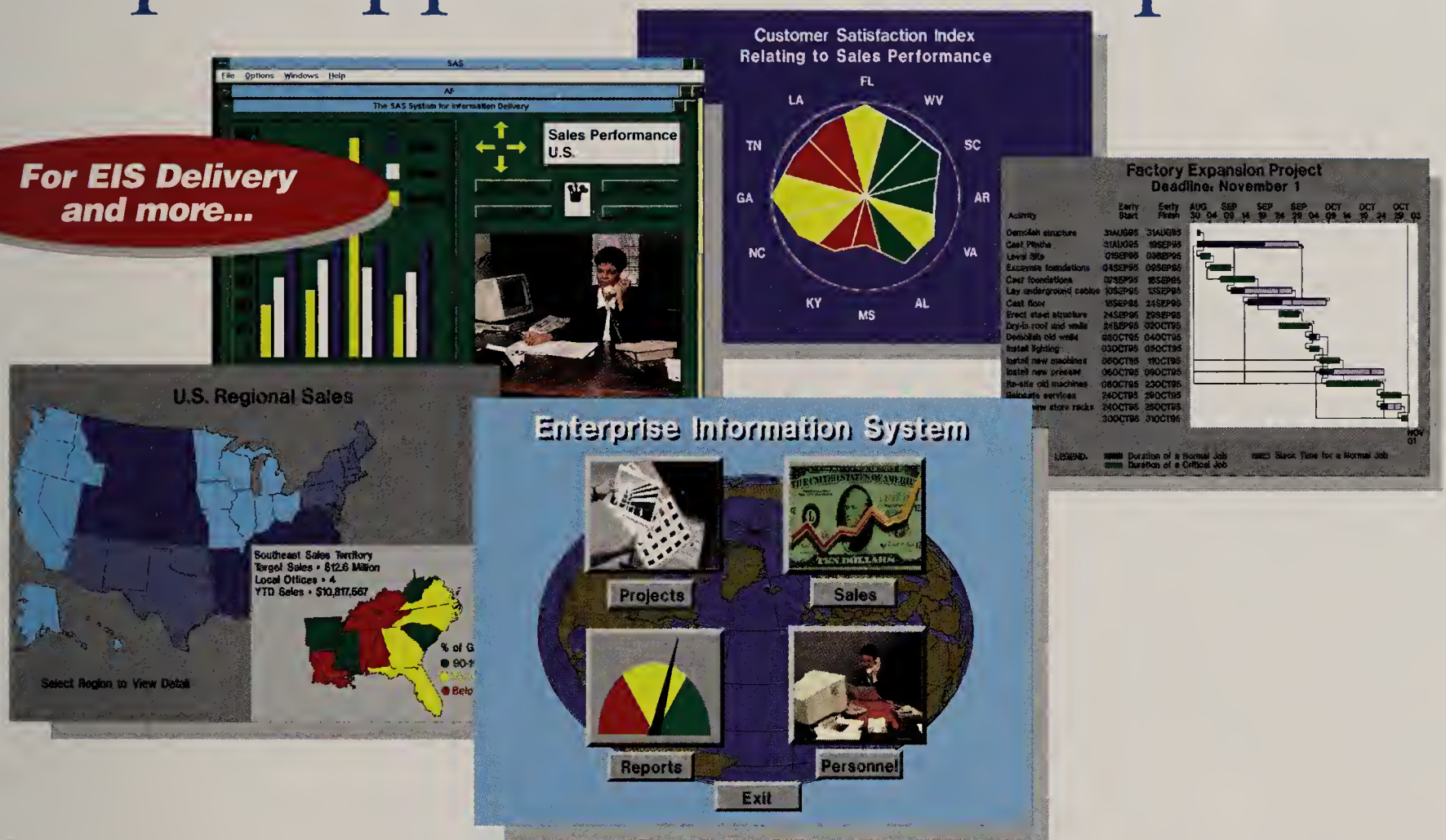
## NOT-SO-INSTANT REPLAY

While the promise of multimedia is alluring, some subjects lend themselves to the technology more than others. The *Sports Illustrated 1994 Multimedia Sports Almanac* should derive greater benefit from the use of sound and video than would, say, *The New Republic*.



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# TRENDLINES

carriers lags even further behind.

■ Increasing customer sophistication and numerous "custom" requests are severely challenging managers' IT resources, often drawing them away from higher-priority initiatives.

Building multiple customer-specific systems is difficult and expensive, and the industry in general has not leveraged technology standardization and process integration. For more information, or to obtain a copy of the report, call 312 648-0111. ■

## CAREER MOVES

**T**exas Instruments Inc. recently promoted **RON BRITTIAN** to senior vice president and general manager of the information technology group. Brittian, who has been with TI since 1965, was most recently vice president and general manager of the same group.

**RON BOLIN** was named director of information services at PolyGram Manufacturing and Distribution Centers in Grover, N.C. Bolin will oversee all information services for the compact-disc manufacturer.

**MEG WILLIAMS** has been promoted to vice president of information systems at Highlights for Children Inc. in Columbus, Ohio. She supervises a staff of 75 employees and is responsible for all computer-related activities at the company.

**DARRELL R. MAY** has been named senior vice president of information services at Allendale Insurance. May has been employed by the Johnston, R.I., company since 1978.

The New York-based Home Insurance Co. has appointed **STEWART B. NAZZARO** to the position of vice president of business systems and technology. He will oversee the coordination, design and implementation of new technology for the company's business while maintaining its current systems.

**WILLIAM C. REED**, Geisinger health-care system's CIO and senior vice president of operations, was recently invited to serve on the Office of Technology Assessment's advisory panel, which will examine how computers and telecommunications might help to reduce health-care costs and improve care. ■

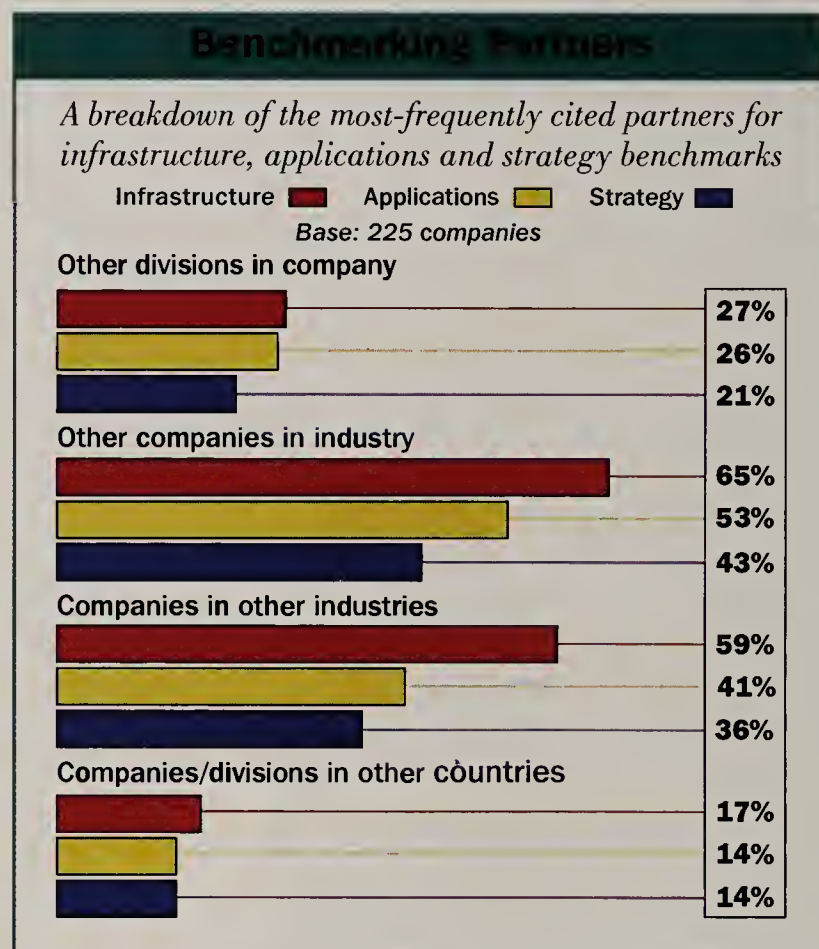
## BENCHMARKING

### MEANINGFUL COMPARISONS

**I**f one of the best paths to best practices is benchmarking, then IS executives are generally on the right road, a recent survey shows. In a study of 225 large and medium-size companies conducted by the New York-based Conference Board, a clear majority of IS

productivity and quality. Estee Lauder, for example, used the practice to get ideas for an inventory-replenishment program it was implementing with retailers. Honeywell Europe observed that the most successful IS organizations have close, consulting-style relationships with the business side that help guide their interactions with users.

While companies gave a variety of reasons for benchmarking, cost, quality, competitive pressures and goal



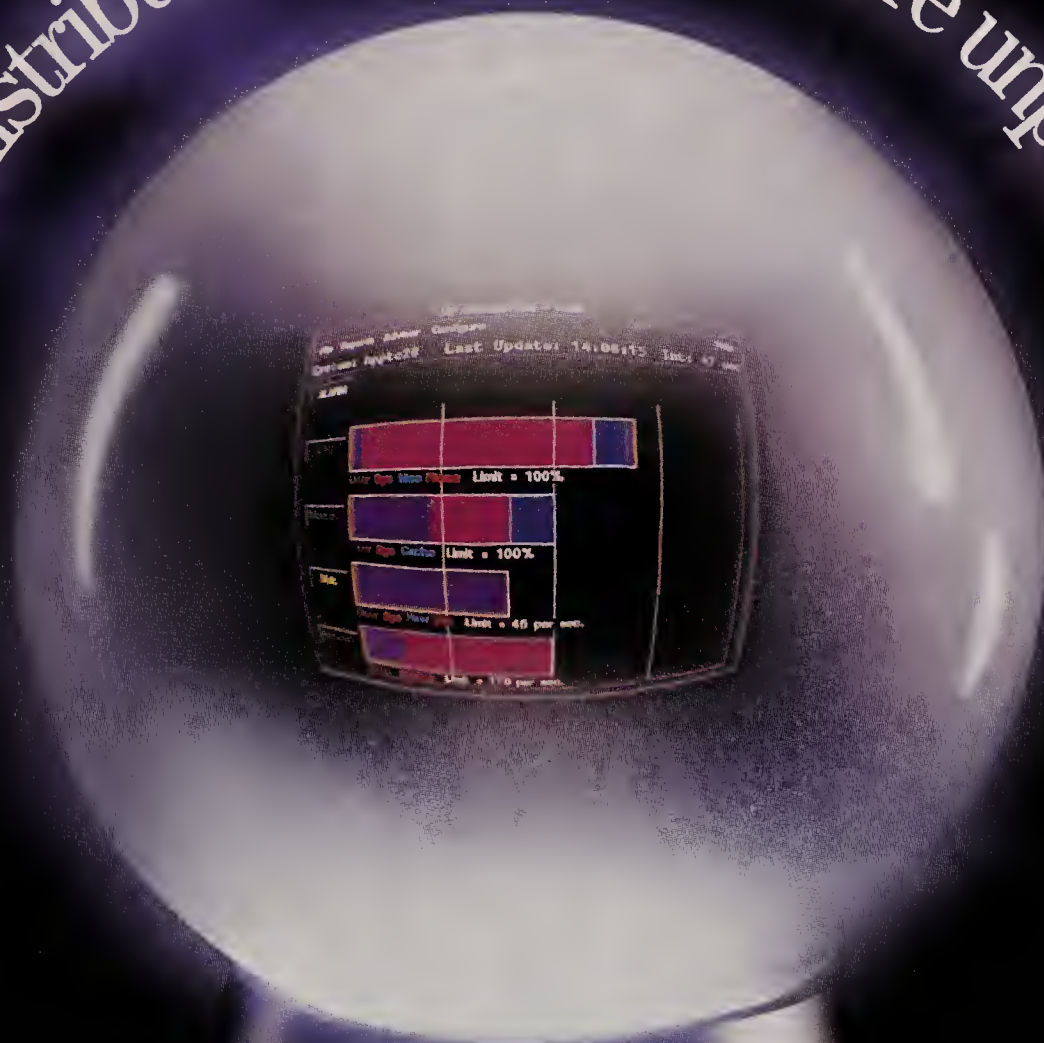
organizations had used benchmarking to evaluate their operations relative to the industry's creme de la creme and to discover new ideas for improving performance.

About 75 percent of respondents with benchmarking experience called their efforts successful, according to the report, with improvements in areas such as cost reduction, customer service,

setting were the most common, and "cost assessment was cited as the main driving force," according to Charles B. Greene, vice president of the Executive Insight Group Inc. and author of the report. At American Express, the chief driver was current pain: The IS organization feared that its time to market was too long and that costs were growing faster than the business. Pfizer Inc., on the other



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# TRENDLINES

hand, was more focused on the future: IS teams visited other companies and used what they observed there to create a multiyear outlook, encompassing technology changes and new-skill requirements.

As for the areas studied, an overwhelming majority of companies reported success in benchmarking infrastructures, while close to three-quarters benefited from benchmarking applications and strategy. Respondents indicated that the benefits derived almost equally from improvements in cost and

productivity and from customer service and quality. As a result of their efforts, companies were able to reduce staff, streamline workflow, improve data-center operations, align business and IT planning, install new technology and in some cases even redesign the IS organization. Amoco's benchmarking experience provided the company with valuable lessons in running technology councils and symposia, involving people in technology transfers and getting feedback from customers.

The future for benchmark-

ing looks even brighter: A majority of respondents, including those who hadn't tried it in the past, plan to do so in the future. And most indicated they would be willing to act as partners for other companies as long as the exchange benefited both.

"There is considerable interest in sharing experiences in areas such as architectures, business and IT alignment and the value of IT," says Greene. "The challenges are to develop comparable data and appropriate partnerships." For information, call 212 339-0231. ■

## HANDS ACROSS THE INTERNET

A new online service may do do-gooders some good. HandsNet, a national network of computer-based resources for nonprofit



organizations, is designed to help users stay current on subjects that might help them make the world a better place to live.

According to the company, based in Cupertino, Calif., close to 2,500 nonprofits are using HandsNet to access and exchange information on social issues ranging from legal services to poverty to housing and community development. Organizations pay a monthly fee and receive daily abstracts from newspapers, wire services and journals as well as RFPs and—perhaps most important to these usually cash-strapped entities—information on available funding sources. Users can also send and receive mail, participate in discussions on common concerns and distribute electronic publications. HandsNet runs on Macintosh and IBM computers. Monthly charges typically amount to \$40, which includes a \$25 base fee and additional online access charges. For information call 408 257-4500. ■

## SNAIL MAIL

Ferris Networks' top-10 list may not have the comic punch of a Letterman offering, but it does help explain why E-mail delivery can sometimes be as slow as molasses.

According to the research firm's recent paper, the most common causes of late E-mail delivery are:

- People sending multimegabyte files
- Message stores getting full
- Failing MTAs (message routers)
- Poorly configured MTA tables

- Message flows that ignore underlying LAN/WAN design

- MTAs attached to a file server over a WAN link

- Overloaded routing hubs

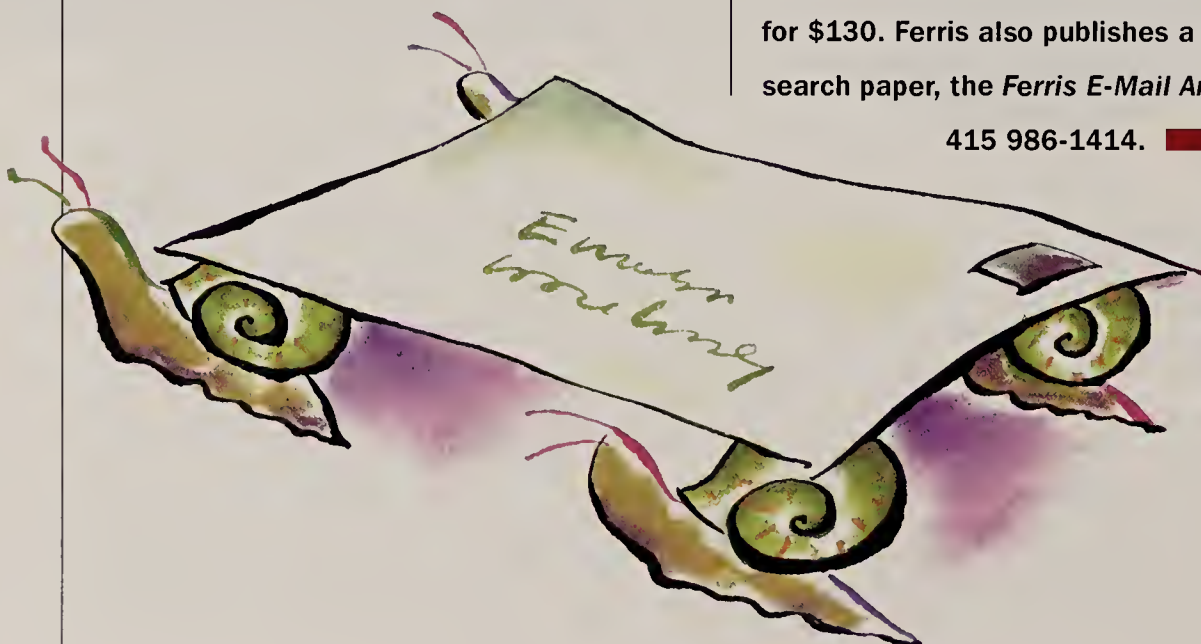
- Slow gateways

- Too many mailboxes

- Dial-in users

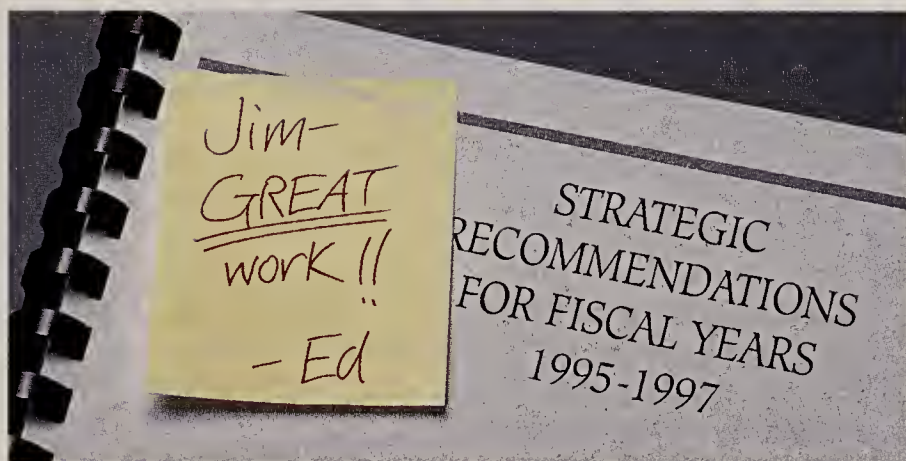
The complete report, which also includes solutions, information on delivery-management tools and system configuration, and a model for calculating bandwidths, is available for \$130. Ferris also publishes a monthly research paper, the *Ferris E-Mail Analyzer*. Call

415 986-1414. ■





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# TRENDLINES

## A PACIFIC EXAMPLE

**B**ill Clinton isn't the only one looking toward the Pacific Rim these days. As industry experts and academics re-examine the so-called "productivity paradox," they are using the experiences of Asia-Pacific countries to deflate the argument that investments in IT do not produce productivity gains.

A recent study conducted by the University of California at Irvine (UCI) demonstrates that in Asia-Pacific countries, a strong correlation exists between growth in information technology spending and growth in gross domestic product and productivity. Moreover, a shift toward IT in a country's overall capital-investment mix is strongly related to improved productivity, the report suggests. For example, Korea, Thailand, Taiwan and Hong Kong—which had the most pronounced shift in investment toward IT over the past few years—also had the highest rates of productivity growth.

Of course, the United States remains ahead of Japan and the other Asian countries in development of the information super-highway and the application of information technology by business. But "the advantage may not last long," says Jason Dedrick, UCI research associate. He points out that Hong Kong and Singapore are already wiring up with fiber optics and digital switching, while Japan, South Korea and Taiwan are planning their own information highways.

"Those countries are also placing great emphasis on training IT professionals,"

## OFF THE SHELF

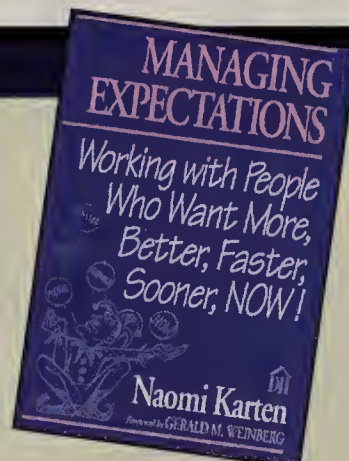
### MANAGING EXPECTATIONS

**WORKING WITH PEOPLE WHO WANT MORE, BETTER, FASTER, SOONER, NOW!**

**By Naomi Karten**  
**Dorset House Publishing**  
**(New York), 1994**  
**216 pages, \$18**

**N**aomi Karten wants you to learn from other people's mistakes. And from her own experience as an IS manager. And from her childhood, her travels and her leisure activities. Because her new book, *Managing Expectations*, relies on observations drawn from everyday life—specifically, Karten's life—the reader is constantly stumbling upon familiar types and situations. It's the sort of book that, in conjuring up your own past failures, prompts you to slap your forehead and cry, "Of course! That's where I went wrong!"

Karten believes that while controlling your own performance is essential to satisfying customers, controlling—or at least anticipating—others' perception of your performance is at least as important. The



subject is especially timely given the business world's current exhortations to listen to the voice of the customer. In Karten's experience, what suppliers hear and what customers think they said are often as different as the messages spoken at the beginning and end of a game of "telephone."

The fault for such misunderstanding is usually on both sides. It can be a matter of language: terms that have precise, yet different, meanings in different parts of an organization. It can be a matter of context: IS personnel responding inappropriately to a request because they failed to understand the situation that gave rise to it. It can be a matter of communication formats: reports delivered in hard-to-understand text rather than simple graphics.

It can also be a matter of history. Karten relates one incident when, as an information systems manager, she was confronted by a

hostile and suspicious customer who informed her repeatedly that he had "been burned by IS" in the past. Conversely, she describes her experience as a columnist who consistently beat her deadlines by a week: When on one occasion she handed in her column two days later than usual (although still five days early), her publisher was unjustifiably disappointed in her.

But *Managing Expectations* is not just a compilation of missed cues and human foibles, and Karten does not believe that simply recognizing the problem is sufficient. Instead, she advises readers to "inform your customers that expectations management is a subject you are now paying more attention to, and discuss how you and they can jointly improve your ability to work together." In addition, she even recommends appointing an "expectations manager" and devotes the end of her book to the role and responsibilities of such a position.

*Managing Expectations* is a worthy addition to the customer-focused curriculum. For IS folks in search of the common wavelength, it should more than meet expectations. ■

## CLARIFICATION

**I**n the March 15 *CIO* article "Financial Affairs," the client/server accounting package used by Russell Reynolds Associates Inc. was identified incorrectly. The company uses SunSystems software from Systems Union Inc., based in White Plains, N.Y. ■

says Dedrick. "We need to invest in our own information infrastructure and improve our education system if we hope to stay competitive in the future." For more information, call 714 856-5449. ■





The competition claims to be ahead  
by leaps and bounds.

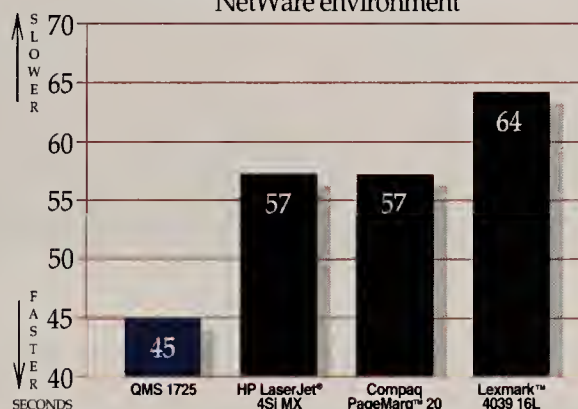


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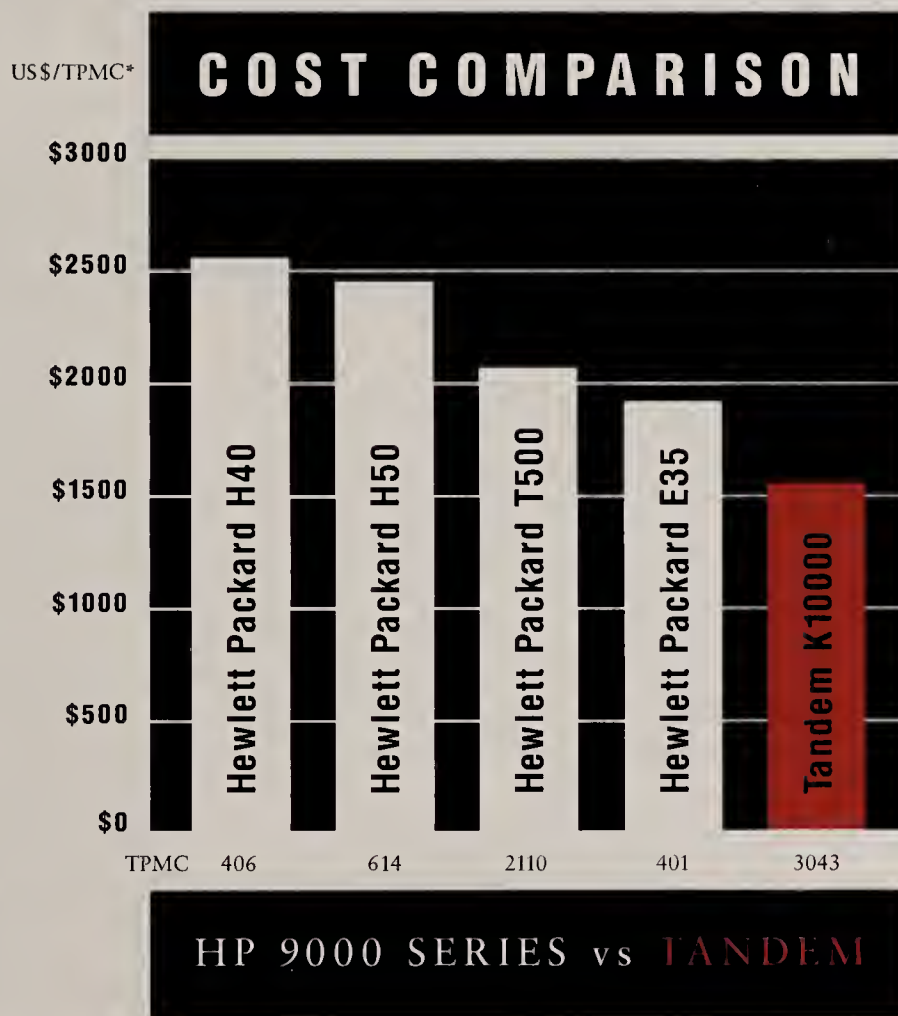
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# Service with a What?

If the sales clerks at some supposedly customer-focused retailers were to finish the following statement—the customer is always (blank)—the responses might not be printable

BY RICHARD PASTORE

**I**n writing for *CIO*, I've covered many companies' zealous commitments to improving customer service, but I've never had the experience of being part of such a drive myself. Not until last year's holiday season, that is, when—not content with the exorbitant salary lavished upon me at the magazine—I took a temporary position as a stock clerk with a local retailer. In my two months there, I gained two important insights. One was how to stack Dustbuster vacuums in eye-pleasing pyramidal displays. The other was that customer-service initiatives live or die on the quality of their delivery mechanisms—store employees and their support systems—not on features or catchy mottoes.

Yes, this particular chain gives hassle-free returns. Yes, it beats competitors' prices. And it does stock the better brands. These are excellent customer-service "features." But for this retailer, and for many other firms in the service industries, poor delivery mechanisms render such features moot.

At my store—a consumer-electronics, housewares, appliances and sporting-goods chain serving the Northeast—customer-service delivery mechanisms were disinterested at best and dysfunctional at worst.

And it's the company's fault. It is hiring unwitting saboteurs and entrusting them with its service reputation and million-dollar computer support system.

Mottoes and mission statements abound. "Legendary" customer service is the chain's proclaimed goal. It wants a reputation as the best of the best. The credo resides in the employee-orientation booklet, the bulletin boards and the lunchroom. One place it doesn't reside is in the hearts and minds of a good many of the store's hourly workers. In just a week's time, I could see that these folks were on a different wavelength. Consider these unsolicited testimonials. From a stock-distribution clerk: "I hate customers." From a salesperson, in regard to a shopper inquiring about a blender: "Tell her to get lost."

I assume the company president meets with customers formally once or twice a year. Maybe the store manager deals with a few customers each day (probably irate ones). But these indifferent souls interact with hundreds of customers each day. That's scary.

OK, maybe you can't expect much from college students earning \$5 an hour. But what about the commissioned salespeople in cameras, video



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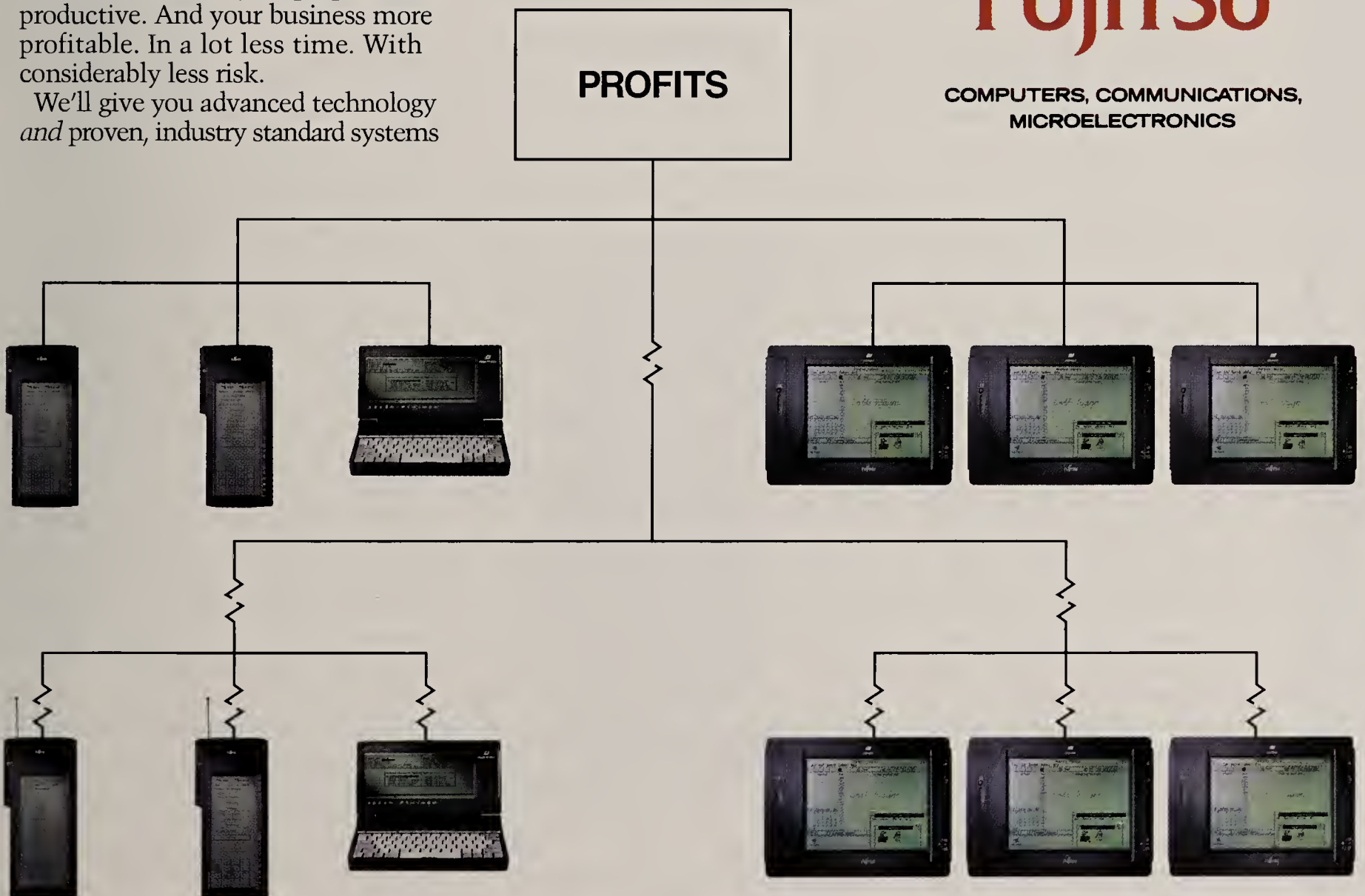
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and vacuums—they should be happy to kiss customers' feet, right? Well, at this store, I saw the vacuum crew disappear for 20 minutes at a time, leaving shoppers to fend for themselves. I watched a young couple spend 15 minutes puzzling over the array of Hoover uprights, crawling around on the floor looking for an outlet to plug in the demo model. No one was there to help them.

In cameras, one saleswoman clearly had better things in mind than waiting on confused holiday shoppers. She acted like she was doing customers a favor by silently handing them display models from behind a glass window. Like that will help someone figure out whether this Pentax model has a deeper depth of field than that Canon. Depth of what?

In video, the obsequious salesman complimented a shopper on his choice of camcorder but then became short and condescending when the customer balked at forking over an extra \$120 for the optional store service-protection plan. "Come here and look at all these moving parts. It's gonna break, you know." (Personally, I try to put salespeople off by pretending I have a relative who repairs this stuff professionally, and even then they pressure me.)

Finally, like most big department stores, this one comes with a counter labeled with the misnomer "Customer Service." Here's where we should find the real ambassadors of the company credo. Why then, does nobody back there smile? Ever? Why, when a customer has waited 20 minutes and finally makes it to the head of the line, does the service person ignore him while she sorts paperwork and attends to other back-office tasks? Would it be so hard just to look up and say, "I'll be with you in just a minute, sir"? The guy must have felt like Claude Rains standing there naked.

Computers also compromise customer service, especially when they fall into the wrong hands. This store's merchandise system logs inventory, pricing and product information, and is intended to keep track of what's

on the sales floor and what's stored upstairs in the stockroom. Unfortunately, it's a tedious mess. It takes several steps for salespeople and stock clerks to enter and update counts for everything transferred between stockroom and sales floor. Users, myself included, corrupted it every day. Since everyone was always in a rush, particularly during the holiday season, even the conscientious occasionally cut corners and skipped entering counts. Much of the stockroom staff couldn't give two beans about the integrity of the inventory system anyway.

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**Companies that deify  
customer service must  
realize it's the lowliest  
employee who delivers the  
goods, and that's where  
they must refocus their  
attention.**

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Customers are directly and indirectly affected by this system mishandling. A shopper wants to purchase a humidifier that's sold out on the store shelf. Looking it up in the system shows that it's out of stock, but chances are there are several sitting upstairs in the warehouse. I spotted dusty clock radios up there that may never get sold, because the system says they're all gone, and I was too busy to log them in or lug them down to the sales floor (heck, I had those Dustbusters to stack).

System inefficiencies disenchant customers (and cost the store sales) by misappropriating employee time. Merchandise-transfer orders, pre-entered by department managers, often got prematurely purged by the system, forcing stock pickers to laboriously re-enter them from scratch before they could pull any inventory. The stock crew embarks on daily warehouse goose chases for items the system guarantees are there but

that turn out to be AWOL. Meanwhile, the clerks don't have time to bring down enough Nintendo games to satisfy sale-incited shoppers. This forfeits countless sales to the store's eight major competitors situated within a 1.5-mile radius. Not to mention customer goodwill.

Rain checks—testimonials to a poor merchandise-planning system. Like rows of paper tombstones, yellow slips mark "Mortal Kombat" cartridges and waffle irons in the warehouse. Their abundance corresponds to an equal number of dissatisfied customers who couldn't get an item because the store failed to anticipate demand. Worse, many of the slips I saw were so old they were decomposing. Why would customers get rain checks and never come in for the item, I wondered. I received an answer recently when a co-worker complained to me that it had been five weeks and the store never called to tell him his "rain-checked" electric blanket had arrived. "Don't ask me, pal. I just worked there," I responded in a flashback of corporate attitude.

What's the solution for all this? Certainly this firm should try to streamline and foolproof its store-based inventory-control system and merchandise-planning decision support. Or, better yet, retire it and purchase something rooted in the 1990s. But what about the personnel? The store can't hire the cast of *Up With People* to work its customer-service counter or pay stock clerks \$35 an hour (I wish). This chain does make an effort. It rewards associates who inspire positive customer letters with premium parking spaces (right near the dumpster!) and shiny badges for their lapels. Now there's incentive. As a stopgap measure, it might try teaching customer-service people to smile.

But seriously, this retailer, and other companies that deify customer service, must realize it's the lowliest employee who delivers the goods, and that's where they must refocus their attention. Try reengineering the delivery mechanisms. **CIO**



**General Machinery (A Division of Wheaton Industries, Inc.)**

# THE CIO'S PERSPECTIVE ON MULTIMEDIA

When most people think of manufacturing, they think of huge machines, showers of sparks and shrieks of drills. But today's plant floor is increasingly an information-intensive environment. Cutting-edge manufacturers demand not only precise computerized controls of manufacturing processes, but also sophisticated, "just-in-time" job support for workers.

One of the most active adopters of new technology is General Machinery, a custom manufacturer of precision production equipment based in Millville, New Jersey. While General Machinery itself has

*IBM  
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solutions help  
this custom  
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reduce cycle  
time by 60  
percent.*

only 250 employees, its relatively small size has not prevented it from accelerating to the forefront of manufacturing technology – including online multimedia job support and cross-departmental desktop conferencing. The result has been more effective and efficient communications companywide.

Here's an inside look at how IBM multimedia technology has helped General Machinery not only improve communications – but also cut cycle time by 60 percent. This special section is highlighted by an interview with General Machinery's "CIO for Multimedia" – Jack Lowry, director of information technology.



# THE MULTIMEDIA PLANT FLOOR

A plant floor worker needing to make a machine adjustment sees the task illustrated ahead of time thanks to full-color images displayed on his PC next to work instructions.

A foreman wishing to document "build" procedures first zooms in with a camcorder, then captures the footage on his PC and annotates the video clip with a voiceover.

Futuristic? Sure – but it's happening today at General Machinery. "We are surprised that we are on the leading edge with this technology,



because it is just a common-sense approach," says Jack Lowry, director of information technology. "We suspect that many more manufacturers will be looking at this type of technology very shortly."

The common theme at General

Machinery has been the integration of information. Multimedia, for example, integrates multiple media types into a single communication stream, while databases manage the information flow. The company's IBM AS/400® databases include MAPICS®/DB (Manufacturing Accounting Production Information Control System/Data Base) and PES (Product Engineering Support/400). MAPICS helps employees deal with the complexity of manufacturing machines that contain thousands of discrete parts. PES tracks engineering changes and product feedback from users, customers, and vendors, allowing the company to identify problems and set priorities.

## From paper to Paperless

General Machinery is a division of Wheaton Industries, Inc., a diversified manufacturer and leading supplier of state-of-the-art glass and plastic containers for the pharmaceutical, cosmetic, scientific and specialty care industries. Wheaton customers demand exacting specifications for their containers; tolerances can be as tight as 1/5000th of an inch. General Machinery designs and builds most of Wheaton's plastics production equipment as well as custom machinery for the industrial and military markets.

Though General Machinery has long prided itself on high quality, its product development time needed to be improved in order to remain

competitive. In 1990, it was taking the company 24 months to go from concept to delivered machine. "There was no formal, automated manufacturing system," explains John Glowacki, vice president and general manager, who joined General Machinery in 1989. "Everything was done manually, on paper."

Under the technology leadership of Jack Lowry, General Machinery decided to exploit information integration as a way to reengineer and accelerate its business. To accomplish this, the company utilizes IBM hardware, software and consulting services. "The value added by IBM experts has been an important factor in our success," says Glowacki. "Their knowledge helped us put all the pieces in place."

The company's success with integrating information is apparent through numerous process improvements. Chief among these improvements is development cycle time, which has dropped from 24 months to about 10 months, with further cuts expected.

While many of its software solutions run on IBM's AS/400 platform, a number of critical multimedia components are based on low-cost IBM ValuePoint™ computers. These affordable OS/2® solutions include IBM's Paperless Manufacturing WorkPlace, an application suite that supports the creation, revision, distribution and display of electronic work instructions using multiple media. Also critical is IBM's Person to Person™ software, which allows employees to share visual information "live" on their PC screens with colleagues across the building or even miles away, using office telephones and networked PCs.

The value added by IBM experts has been an important factor in our success. Their knowledge helped us put all the pieces in place.

John Glowacki



### Paperless Manufacturing WorkPlace

General Machinery sees Paperless Manufacturing WorkPlace – or “Paperless,” as the company calls it – as a tool with great potential. “Pictures tell more than a thousand words,” notes Andy Dimacale, systems administrator. “Instead of trying to interpret text instructions, our plant floor people can now use Paperless to actually see what they need to do. This information is given to them at the exact moment they need it, because the images and video clips are synchronized with the delivery of step-by-step instructions. The information is also consistent.”

“When you’re building a machine with thousands of parts, there isn’t one ‘expert’ on how the whole machine goes together,” says Lowry. “But with Paperless and P2P [Person to Person], we are trying to embed a continuous source of expertise into the build process. As the build process continues, the expert changes, but the interface to that expert stays constant.”

Work orders created with Paperless can include a wide variety of media. For playback, General Machinery uses IBM ValuePoint computers or IBM Industrial Computers equipped with an IBM ActionMedia II Display Adapter. This optional adapter allows the company to display high-quality, full-motion video – as well as audio and high-quality images – right on the plant floor. The adapter also enables the com-



pany’s Person to Person software to support videoconferencing.

Preparing work order modules with video clips and images is surprisingly easy. A consumer camcorder is used to collect video clips of the manufacturing process. Still images are then imported into a paint program for marking up with text captions and other visual aids. The finished image is then ready for inclusion in an instruction sequence.

At General Machinery, there is no video production or multimedia department. Instead, there are simply engineers, planners and plant floor operators who are communicating better with IBM multimedia tools. Even the information systems support function is small, consisting of only three people.

### Person to Person – “visual” reality

To support realtime, *live* communications, General Machinery turns to IBM’s Person to Person (P2P) collaborative computing software. In a software-only configuration, P2P enables two or more colleagues working remotely to share their PC screens while they speak by telephone. When supported by

*As far as I know, there isn’t any other company besides IBM that offers one-stop shopping for all the hardware and software needed for total manufacturing integration. That’s important.*

*Jack Lowry*

an IBM ActionMedia II adapter, P2P also enables desktop videoconferencing. P2P supports OS/2 and Windows workstations, with future support planned for AIX®.

“Sharing information across PC screens is very powerful,” says Lowry. “You can both see the same information as you are talking. That’s important, because otherwise people tend to develop their own mental picture of things that are described to them, and often this picture is incorrect. To see things while you are communicating makes a big difference.

“Every time we look at P2P, we have a new application for it. It started off as a utility for plant floor people to contact engineering. Now I am seeking to extend P2P to my sister divisions and possibly to our customers and suppliers.

“Tools like Paperless and P2P just make sense,” continues Lowry. “The resources that we have are limited. Paperless and P2P help extend our organization and allow us to operate more efficiently. A lot of the ‘walls’ between departments are coming down.”

### Why IBM

“As far as I know, there isn’t any other company besides IBM that offers one-stop shopping for all the hardware and software needed for total manufacturing integration,” Lowry notes. “That’s important. I want to worry about reengineering the *business*, not about integrating software and hardware.

“We knew that if we kept on track and followed some basic directions from IBM on what solutions work well together, we would minimize a lot of the tough implementation issues. In choosing IBM, it was easy to put a sophisticated solution together and then concentrate on what we really wanted to do: reengineer the business.” ●



# An Interview with Jack Lowry, Director of Information Technology, General Machinery



**You've been trying to reduce cycle time at General Machinery. What opportunities have you found?**

**LOWRY:** Reducing cycle time involves all aspects of the business. It's not simply making a product faster. It is moving decisions through the system faster. From the conception of an order – how fast you get that into your system, and how fast it's reacted to. How fast you generate a purchase order. Everything.

Cycle time is so critical. And the key to reducing it is integrating your business processes.

**Does IBM's Paperless Manufacturing WorkPlace software help?**

**LOWRY:** Paperless has got a lot to do with it. It is actually changing our structure.

We are using Paperless to document our build procedures. For example, what is the exact sequence of parts needed to produce a machine of 6,000 items? Paperless allows us to look, very precisely, at how we are sequencing production. I can tie that information back to my MRP system. And in the end, I can give the production worker on the plant floor a day's worth of parts. He gets a little box out there, and he has every part he needs to do eight hours worth of work.

So Paperless is actually going back to my MRP system, which is MAPICS, and making that even tighter than it was originally. I can get very, very aggressive on my MRP scheduling, because Paperless gives me a level of detail off the plant floor that I didn't have before in just building materials and instruction lists. It's giving us an advantage through better scheduling, less inventory, and more productive work on the

plant floor. And better-quality machines – they just go together better.

I'm also getting better satisfaction on the plant floor. Most workers will tell you they normally spend half their time running around doing dumb things. I've always heard the story, "If you just give me the parts, I'll make it happen." That's what we're going to do. We are going to give them the parts they need, in the right sequence, documented correctly. And I use technology to pull that off.

**Does this relate to ISO 9001?**

**LOWRY:** A lot of what we are doing actually ties into ISO. ISO is an international certification that requires heavy documentation, and Paperless is a great tool to cover a lot of its requirements.

Paperless is going to document most of my procedures – how I build things, how I service, how I repair and how I maintain. When someone wants to know how you build that machine, Paperless can tell you how. When someone asks how you make that part, Paperless can tell you how. How do you service that? Paperless.

So rather than have a paper manual, I am going to have a paperless manual. I can control it better and be much more dynamic with it. In fact, once you get started with something like Paperless, you may think it is just for ISO, but it will actually help you redefine your business.

**How did you document your procedures in the past?**

**LOWRY:** A year ago, the way we built a machine was with a photo album. We are elimi-



nating that by using Paperless. The photo is inside the PC. When we make on-the-fly changes on the plant floor, I can capture and track the changes with Paperless. We are going to be able to get a handle on change management and stop doing dumb things to ourselves. In the past, there was a tendency not to document the nuts and bolts of revisions.

#### **Can you make the software changes on the plant floor?**

**LOWRY:** The initial input for the Paperless procedure is going to come off the plant floor. It will be generated by plant floor personnel, and then it will go through a review process.

My three foremen are all now computer-literate – in fact, they all now have PCs at home. From people who had no technology four years ago, they are at a point now where they have asked to do PC work from home. They will dial in and do their paperwork on their home PC. And when they come in, they can get right into making the day happen.

#### **What other technologies are you looking at?**

**LOWRY:** We are getting into voice recognition, using IBM's continuous speech recognition technology. We will be able to talk to our injection blow-molding machines, because there is a PC attached to each machine. There are certain commands we can have voice-generated. It frees up the operator from having to worry about a keyboard.

Voice recognition has applications not only on our plant floor, but in areas such as order entry. So we are looking at that as a new direction.

#### **What about video?**

**LOWRY:** We're starting to put TV on our network. It's our own concept of interactive television. Live TV can reduce the cycle time for reacting to a situation. We can see what's going on *as* it is happening. And we can react to that a lot faster.

If we need a video of a problem in a plant in Puerto Rico, we can watch it on TV here. Normally, we would have to wait two days to

receive a videotape showing the problem. It would be much more dynamic if we could do interactive television. We could have somebody there with a video camera sending TV video live to us. We could view what's going on and communicate what we want to focus in on. And we could store that video here on our system.

Sometimes we have situations in a plant where a machine is not running well and they are not sure why. And we'll have to send someone as far away as China to have a look. In many cases, it takes someone just looking at it to say, "Oh, you didn't do this." And if you could just view that through TV, the time and cost savings could be tremendous.

#### **What are you using to interface your computers with TV?**

**LOWRY:** IBM PS/2® TV. It's a little platform that sits beneath the monitor and allows you to play TV on your monitor. We got them, put them in, and in a day we had it going. It was too easy.

#### **You stay consistently with IBM technology. Why?**

**LOWRY:** If you stay consistent with the technology you are using, adding more things to it is just another step, just another increment of sophistication and complexity. Using somebody else's technology would be much more difficult than simply using IBM. We are in the business of reengineering here. We are not in the business of systems integration.

#### **The counterargument is that you get locked into the ideas of one vendor . . .**

**LOWRY:** That may be true if you are using a *small* one-vendor shop, but I feel very comfortable using IBM and its selection of products, because they deal with so many different types of businesses. They generally cover all the things I'm looking for.

I've seen a lot of IBM technology that helps the handicapped to use the computer. When you are on the plant floor building products, in many ways you are handicapped. You can't necessarily access a monitor that quickly, or you've got your hands full. So some of the applications that are intended for the handicapped, we could use. Voice recognition – there's something that we didn't even anticipate needing, and IBM had an excellent solution. A device on your head that you can use as a pointer. The list goes on.

#### **What about the future?**

**LOWRY:** I'm thinking about heads-up displays (a small pair of glasses that has a virtual monitor in it), which are just starting to come out now. It may not be cost-effective today for us, but I know that in a couple of years it will be. And I





know when that happens, I am going to look to IBM for that solution.

It gets scary when you start getting creative with technology. And that's the advantage of using somebody like IBM. They have products that address so many different areas that I can be free to be as creative as I possibly can.

**How have you used IBM's Person to Person software?**

**LOWRY:** We have about six nodes of that now, and we're expanding. We've embedded it into Paperless and we're going to use it for internal two-way video communication.

Phone communication may be personal, but it still has a degree of impersonality. When you work face to face with someone, I think that there is more of a buy-in on what you are talking about. And I think that P2P is a way of getting people more committed to each other. I firmly believe that. You get more of a buy-in.

**How should people think about the importance of multimedia as they reengineer their companies?**

**LOWRY:** I look at multimedia as an investment in the most important assets that you have in a company — your people. The more comfort they have in what they are doing and how they are doing it, the more user-friendly their tools are, the better job they are going to do.

It is hard to put a dollar to that, but I know that most days I see a lot of smiling faces here. I have people who want to come to work. I have people who stay late on their own. I have people dialing in from home on their own. And I want to continue that. If that means I have to put more money into multimedia to pull that off, then I am going to do it.

**Some people will give lip service to multimedia but say, "Let some other companies pioneer and perfect it."**

**LOWRY:** Well, then you are always going to be the one chasing the pioneer.

If someone is waiting for something to stabilize or be perfected, it is probably never going to happen. Technology changes so quickly now that what we think is cutting edge today may be obsolete in two years. You need to get your cycle time down, so that you can grasp each new concept more quickly than your competitor, apply it, and move on to the next one. If it means that I am on the cutting edge of new technology, I just know that I'll be done with my learning curve before my competition is even starting. Which gives me an advantage over them.

It is not going to help me to be learning old tricks, to be the same as everybody else. I want to be *better* than everybody else. Technology is a tool to do that. That's why being the technology leader is so important. I'm confident that we are — and will be. ●

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**T**HE RECENT RECESSION hurt a lot of trades, retailing among them. But for retail, which is used to riding out such storms, drying off and getting back to business, this recession seems more of a turning point than just another dip in the line chart. The retail landscape

**The rapidly  
mutating  
shopping  
experience  
could leave**

Traditional merchants, such as Macy's, are experimenting with shopping by television. Even catalog retailers like Spiegel, which already invade the home, are trying TV as a more entertaining—and eventually interactive—alternative. According to Kurt Salmon Associates, nonstore retailing will balloon from its current 15 percent of the industry total to more than 50 percent over the next 15 years.

To recapture customer loyalty, merchants are trying to get a better fix on who's buying what, the better to micro-market. Supporting these efforts are information systems that capture purchase and customer-demographic information and fuel programs to reward loyalty and frequency. Others are leveraging IT to make shopping more convenient.

Finally, retailers are using decision-support technology to hone their merchandise-planning skills and refine the inventory-replenishment process. The goal is to get the right items in the right stores at the right price as cheaply as possible. Consumers are no longer willing to subsidize inefficient distribution systems, and they're less forgiving for the time they waste in stores that don't carry enough of what they really want.

We devote the bulk of this issue to examining how the trade is reshaping to better dovetail with this consumer environment. Other industries with dips in their line charts should take note. **CIO**

# Shelf Life

is transforming at the consumer's insistence, and retailers must change with it or suffer an eternal recession.

The shop-till-you-drop '80s have been displaced by the shop-quickly-and-stop '90s. A consumer study conducted by Grey Advertising found that 80 percent of shoppers just want to find what they need, pay a fair price and get the hell out of the store. You might call it "precision shopping." Designer names and venerable brands no longer inspire awe or loyalty, quality has been demystified, and value and efficiency have ascended the consumerism throne.

Retailing is adapting to this change in part by exploring new delivery mechanisms that are speedier, more direct and more entertaining.

**stodgy  
retailers  
stuck firmly  
in the  
bottom of  
the cracker-  
barrel....**







# Keeping Them In The Loop

In a world where nothing can be taken for granted, the hearts, minds and wallets of customers are perpetually up for grabs. In retailing, IT is the glue that can keep them from getting away.



BY PETER CASSIDY

There's a certain irony in using a telephone at Bolt Beranek and Newman (BBN) Inc. After all, the 46-year-old computer and communications firm developed the first-ever commercial E-mail system (for Digital Equipment Corp.'s PDP-10) in the early 1970s. So, when Thomas Cook Travel offered the Cambridge, Mass., company the opportunity to use E-mail rather than the telephone to order its airplane tickets and other travel-related products, BBN was appropriately quick to embrace it.

Early this year, 12 executive secretaries were linked directly to travel agents at BBN's on-site Thomas Cook office through the in-house E-mail system, eliminating time-consuming phone calling. Now, when the secretaries need to order tickets and make other travel

reservations, they send their requests over E-mail. In less than an hour, an itinerary is sent back for approval.

"After three months of using it, they wouldn't consider picking up the telephone," according to BBN's travel manager, Terry Sullo. For users, the process is transparent, making the purchase of these complex goods and services as simple as exchanging intraoffice memos.

In addition, Thomas Cook's IS staff has developed a variety of electronic information services that let corporate customers choose among electronic booking and travel-planning resources—some as powerful as those found on the travel agent's own systems.

The result is that customers are able to purchase travel at the highest level of knowledgeability, and with unprecedented ease. For Thomas Cook, this all adds up to a vivid projection of its corporate presence right on-







# A MATTER OF TIME

*Future IT will deliver market share to interactive retailers  
by paying consumers a precious dividend of time*

**WITH EACH GENERATION** of technology mastered, new possibilities come into focus—some of them unanticipated. For instance, the POS scanning consoles that were first developed to speed the checkout process eventually became one of the most important inventory-control tools in retailers' management kits. The information technologies that are shaping up now are tightening the information loop that joins materials fabricator, manufacturer, retailer and customer, with the goal of better service for the customer. Some experts predict that the loop could eventually become so tight that it cuts out traditional retailers. This scenario appears ever more probable, given the rapid emergence of interactive electronic media that would allow customers to shop from home over televisions or personal computers.

"In the future," says David A. Cole, chairman of Atlanta-based retail consulting firm Kurt Salmon Associates, "...someone will realize that Susie Jones buys three pairs of pantyhose every month and will tell her, 'We will send you those three pairs every month. You don't have to go to the store. Just sign this form, and they will come automatically.' Susie Jones is going to be real happy, and Hanes [the pantyhose maker] is going to be real happy to link right up to the customer."

Cole says that the "corporate entity that controls the consumer-behavior database will be the winner in the next millennium." Because, he says, consumers are "beset by time poverty" and thus will value any initiative—and give their business to any provider—that promises to save them time and money. "The most efficient method for any sort of shopping is to cut out all the middlemen and go directly from manufacturer to consumer."

—P. Cassidy



to the customer's desktop.

The system in use at BBN is just one of the imaginative programs that retailers are developing to accelerate, refine and personalize customer service, cement customer loyalty and lure clients hungry for the advantages that elegantly deployed IT can provide. Some of these applications are simple—positioning checkout stations closer

to customers' cars—while others test the power of an enterprise's IS infrastructure. But all of them place IS at the vanguard of the marketing and customer-service activities.

Retailers increasingly want to get to know their customers, the better to leverage marketing and promotional programs in these times of brutal competition. But customers who use cash or third-party credit cards deny retailers the raw material they need to fuel demographics-based micromarketing efforts. To collect customer demographics and at the same time encourage customer loyalty, retailers are employing frequent-buyer programs and other affinity schemes.

The Great Atlantic and Pacific Tea Co. (A&P), a food retailer operating several supermarket chains around the eastern and central United States, has developed a frequent-shopper-card program that automatically discounts sale items at the point of sale (POS). That kind of immediate gratification spurs repeat usage of the card and, subsequently, allows the A&P supermarkets to collect enough information to create useful individual consumer profiles.

Pete Rolandelli, A&P's vice president of MIS, says the card program is an important advance for his stores. "Really, it's an important first step for us. Now we know who our customer is with that card—which is a source of considerable marketing strategy."

The frequent-shopper-card programs are integrated right into the POS technology. Rolandelli says his stores use a turnkey system, the IBM Corp. 4680 that is driven by two IBM PS/2s and linked to cash-register consoles. The system uses bar-coded rather than magnetic-strip cards to leverage the scanning technology already in place.

Consumers presenting the card are able to buy advertised sale items at the discount price without presenting clipped paper coupons. As long as they are frequent-shopper members, the system gives them the discount automatically. At the end of the transaction, shoppers can look at the register receipt and see the subtotal, the subtracted "clipless coupon" rebates and the calculation of the savings realized on that shopping trip. The receipt also records the total savings from discounts for the entire year.

Rolandelli says the program is operating



in four chains, at some 600 stores. At those stores where the card is being issued, A&P finds that it is used in 45 percent of sales transactions.

The key to a successful card program, Rolandelli says, is that "there has to be something in it for [the customers]." The payback has to be immediate, "and it's got to be relevant to the purchases they're making in the store right there."

**T**he program has been in development for more than two years and is beginning to yield important data that will be highly useful in target marketing campaigns. For example, A&P now knows that more than 50 percent of its trade comes from less than 30 percent of its customer base, indicating an opportunity for sharply targeted marketing. "This is going to change our business dramatically," Rolandelli says. "We'll be doing more marketing to our best customers."

"The next step is that we can offer electronic coupons more reflective of specific customers." For example, a shopper who buys baby food could receive a coupon for baby shampoo that is announced through a flier sent to the home, a note on the cash-register receipt or even through a kiosk system that notifies shoppers which discount coupons are available that day, Rolandelli says.

This kind of scheme holds out the promise of allowing supermarkets to keep their marketing strategy secret rather than, in effect, billboard it in the local paper every week. Rolandelli, obviously intrigued by the possibilities, refers to the concept of personalized discounting as "stealth marketing."

Two increasingly important aspects of successful customer service involve giving consumers a sense that unique and timely value is being delivered in a product or service and engendering what sociologists call "agency"—the feeling on the part of the customer that he or she is in control of the experience. These "warm fuzzies" are the sorts of transaction attributes that at first blush seem unlikely to translate easily into the digital domain. But, increasingly, companies are finding that IS can play a commanding role in delivering both of them.

Lowe's Home Centers Inc., based in North Wilkesboro, N.C., brings both the most basic and the most sophisticated technological solutions to the retail floor at the same time. Lowe's, a home-repair and -remodeling supply company with 317 stores in 20

states, leverages in-store computing power for many customer experiences that could just as easily take place without it. Lowe's uses its IS investment, however, to add timely value and foster agency right on the retail platform every day.

Lowe's Senior VP of MIS William Irons says one of the most popular IT innovations at the stores is its simplest: a POS station in the parking lot. During the spring months,

## **RETAILERS INCREASINGLY WANT TO**

**get to know their customers, the better to**

**leverage marketing and promotional programs**

**in these times of brutal competition.**

Lowe's garden centers at its superstores are beset by consumers buying up heavy sacks of peat moss and other soil conditioners. The shorter the trip to the car with such items, the better. Using wireless technology, Lowe's is able to operate a virtual drive-up service for these and other weighty seasonal items, according to Irons. For Lowe's, developing the service was just a matter of marshaling the available IT resources. Its superstores already have Symbol Technologies Inc. wireless network communications in place for inventory control. Lowe's brought in Symbol LRT 3800 devices, essentially hand-held scanners, and linked them to its IBM 4684 registers through the existing wireless network. So, instead of hauling heavy sacks from an in-store display to the point of sale and then to the parking lot, customers can glide up in their cars, dart out, grab their purchases, get scanned on the fly and drop the items into their cars nearby.

Inside the stores, Lowe's has leveraged its in-house and corporate computing power to deliver sophisticated modeling and scenario-generating services at its kitchen-and-bath and outdoor/recreation departments. Customers view layout and materials options and get estimates of costs according to each variation. A retail representative at a Lowe's Home Center Kitchen Design Center, using CadQuest software on a PC, can display kitchen layouts on oversized terminals suspended from the ceiling for easy viewing. After the customer chooses a design option, the representative can calculate the cost of materials for it.

To the consumer, it's a transparent pro-



cess, but it all happens through the elegant linkage of computing power. The pricing scenarios are calculated by the in-store IBM RS/6000 which then reports back to the design center's PCs. The customer's orders are passed on to Lowe's suppliers

**"INSTEAD OF CALLING AND HEARING A recording say, 'Please hold,' you can look up the order in a computerized catalog in the same amount of time."**

—TOM BRASWELL

through a satellite network, Irons says, assuring more-accurate order fulfillment than is possible though the telephone and fax. This adds up to greater numbers of satisfied customers getting exactly what they want, and in a timely way.

Providing excellent customer service is hard enough when the customer comes to you in the flesh. But for companies that seldom, if ever, have face-to-face encounters with their customers, technology can be used to compensate for some of that missing "intimacy." A lot of the most useful initiatives in enhancing customers' perception of service have to do with simply using IS to bring customer, retailer and often supplier into a closer circle.

David A. Cole, chairman of Kurt Salmon Associates in Atlanta, says that successful companies "are increasingly defining their IS scope to be much broader than their own corporate boundaries.... The database is much broader now, covering the entire value chain, from raw materials through consumer purchase and satisfaction," Cole says.

The best catalog retailers use tightly integrated inventory, shipment and ordering systems to bring customers, warehouses and manufacturers into virtual contact. L.L. Bean Inc., the outdoor-wear and -goods cataloger in Freeport, Maine, can provide customers with up-to-the minute information on when out-of-stock merchandise will arrive from the manufacturers.

"If I'm L.L. Bean and I get an order for a pair of slacks, I won't refuse the order even if I don't have the slacks until April 3," says Cole. "I know when they are produced and shipped from my supplier." So, the L.L. Bean customer-service representative will

give the caller a precise date when the item will arrive; if there is any slippage in the promised date, Bean will forewarn the customer by postcard.

In the quest for stronger ties, some companies are even providing the technology that is required to get the best information to their customers. Genuine Parts Co., of Atlanta, the exclusive supplier of parts to NAPA Auto Parts retail outlets, has two kinds of customers: people who walk into NAPA stores and the auto-repair shops that buy parts to repair cars.

Tom Braswell, vice president of information systems, says that for both kinds of clients, "the name of the game is having the right parts at the right time." For that reason, Genuine Parts has all but disposed of paper catalogs, equipping its NAPA stores with electronic versions.

Genuine Parts has also equipped its other customers, some 6,000 car-repair shops, with terminals and smart modems to allow them access to that same electronic catalog and an online ordering system in use at the NAPA retail stores. "It helps them very quickly find out the availability of parts and place an order," says Braswell. "And it takes out the mistakes" that can crop up when parts are ordered over the phone.

"Instead of calling and hearing a recording say, 'Please hold,'" he says, "you can look up the order in a computerized catalog in the same amount of time."

The Genuine Parts catalog system puts auto-repair shops directly into the information loop—as if they were part of the company themselves. This scheme of information sharing effectively fuses the domains of the client and the supplier, while cementing repair shops' loyalty to NAPA and discouraging their patronage of competitors that may be less convenient to do business with.

This driving ambition to be indispensable to customers leads retailers to stretch in new directions. According to Nadine Butler, project manager in Thomas Cook's software-development group, the IS staff took on the Bolt Beranek and Newman case—an arduous trip up the learning curve—largely because the experience will serve Cook well in linking up other clients and programs. "Next," says Butler, only half in jest, "we'll be trying telepathy." **CIO**

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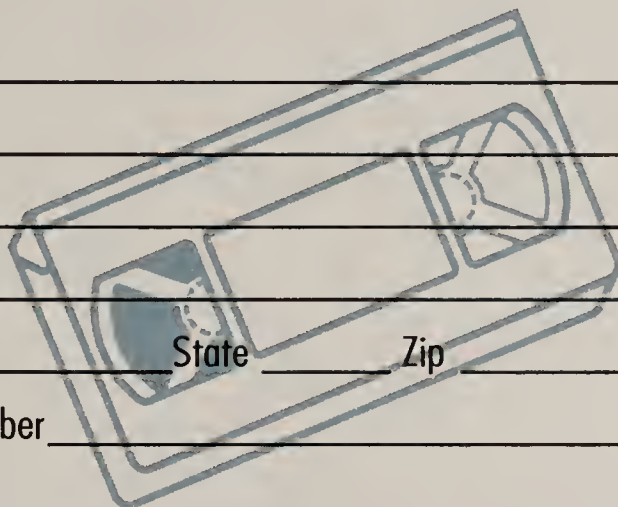
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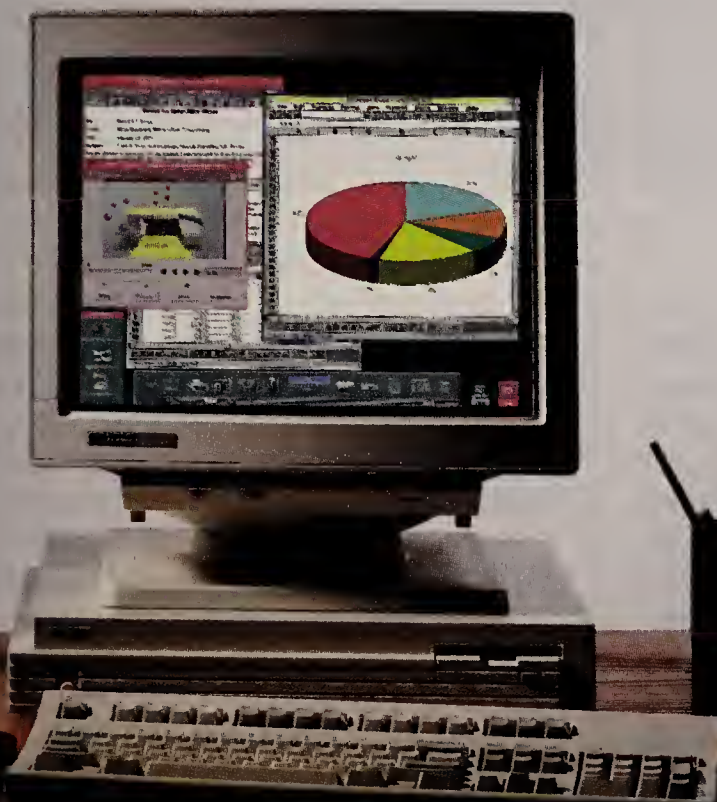
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# Changing Channels

There's a new TV generation on the rise, and that's the increasing number of retailers that use television to sell their wares. Currently the fastest-growing retail channel, video shopping is expected to really take off when things go interactive. Retailers that hope to be ready are taking steps now—and embracing a whole new kind of IT.

BY DAVID H. FREEDMAN

**A**re you ready for the new world of retailing? Today, those of us captivated by The Sharper Image's leisure-enhancing selection of gadgetry and accessories can either order by phone from a glossy catalog or browse through one of the company's flashy retail stores. In the not-too-distant future, there may very well be a third option: putting on a visored virtual-reality helmet in your living room and guiding yourself via joystick through a simulated store chock-full of product demos, says Vince Barriero, the company's senior vice president of customer service and MIS in San Francisco. When you decide on a product, you click on a button or two, and the product will be on your doorstep within a day.

Barriero is earnest about his vision, but

he is also candid about the fact that the technology that will enable such armchair commerce—or any sort of video-based shopping experience—isn't likely to come from The Sharper Image itself. "We don't have the expertise to build these kinds of systems," he says.

While it may seem all too easy to conjure up a technology-rich future for your business without having any idea where the technology will come from, Barriero is probably ahead of the game for at least having recognized that there is an ominous gap between the capabilities of his company's current systems and the requirements that are looming in the future of shopping.

"Retailers are going to face a huge challenge in the area of systems," says Stephanie Shern, national director of consumer products industry services for Ernst & Young in New York. "Television and interactive shopping is a totally different way of doing business."

Much of the public still sneers at the jewelry, cosmetics and exercise-gadget hawk-





VINCE BARRIERO envisions a technology-rich future for retailing.

ing that seems to be the essence of the television-based shopping experience as delivered by the Home Shopping Network Inc., QVC Inc. and any number of infomercials. But shopping via television—or video shopping—in which viewers see a product displayed and then call an 800 number to order it, is the fastest-growing segment of the retail industry, projected to reach \$4 billion in sales in 1994, according to Shern.

That figure will “explode” when video shopping goes interactive, says David A. Cole, chairman of retail-consulting firm Kurt Salmon Associates in Atlanta. Interactive video shopping means viewers will be armed with some sort of remote control—

perhaps even a joystick—that will enable them to select from different video segments, depending on which products they’d prefer to see on the screen. According to a Kurt Salmon poll, three-quarters of all adults haven’t yet given video shopping a chance, and the main reason is that most of us don’t want to put up with the one-product-at-a-time format.

“I’ll buy a pair of Dockers [pants] on the TV when I can key right in on them through all the other products instead of having to sit there hoping the shopping program decides to run [them] sometime in the next two hours,” Cole says. Right now, 85 percent of all retail purchases are made

**VIDEO**  
shopping is  
the fastest-  
growing  
segment of  
the retail  
industry.





**GORDON COOKE:**

*"The worst thing you could do in this business is create customer demand and then not be able to satisfy it."*

in stores, he notes. But he predicts that 15 years from now, 55 percent of purchases will be made by telephone and especially remote control.

Today's noninteractive video shopping is just a stepping stone on the way to this interactive video world, which should become reality after the turn of the century, according to a recent study by market-research firm Forrester Research Inc. of Cambridge, Mass. Along the way, retailing will also explore online shopping via personal computers in the home and workplace—itself a \$4.8 billion market by 1998, the report predicts.

No wonder the sneering has stopped in

the executive suites of even the most conventional retailers. Suddenly, they see a way to halt the erosion of sales that has been occurring as customers become increasingly fed up with distant, crime-ridden malls and towering piles of lifeless catalogs. Among the companies that have announced plans to start or participate in new video shopping services are such prominent and, in some cases, upscale names as Williams-Sonoma, Spiegel and Macy's. When it comes to discussing details of their ventures and of the systems work needed to pull them off, though, these and other normally publicity-friendly retailers tend to clam up tight. "It's just too sensitive a top-



ic," explains a spokesperson at outdoorsy retailer L.L. Bean Inc., revealing only that the company recently established an executive slot called "director of new media" to "study technology and opportunities."

**A**t first glance, the requirements of noninteractive video shopping, at least, may not seem all that different from those faced by any catalog retailer. When customers see a product they like—whether in a catalog or on a television screen—they call an 800 number and order it, paying by credit card. In fact, most of the catalog companies do have the basic systems needed to support video shopping, including sophisticated online order-entry, inventory-management and shipping systems.

That's why Catalog 1, a new venture in video shopping via cable TV headed by Time-Warner Entertainment and Spiegel, has invited only catalog retailers, including The Sharper Image and Williams-Sonoma, to sign up. Catalog 1's programming will provide the 800 number of a partner when it displays that particular company's wares so that each partner handles its own phone orders with its own systems. "To do this kind of thing properly, you need a good customer-service program and the ability to measure and project demand to make sure you always have enough product in inventory," says Gordon Cooke, president of Time-Warner Entertainment's Interactive Merchandising division in New York. "Today, 99 percent of all retailers don't have the systems you need to do this. They may take orders over the phone, but they fill them off the floor inventory, and they don't know who most of their customers are or how to anticipate demand and fulfill orders quickly," he says. "The worst thing you could do in this business is create customer demand and then not be able to satisfy it." Most catalog retailers also have systems set up for dealing with daunting merchandise-return rates—near 30 percent for many product lines, notes Ernst & Young's Shern. "The inventory issues get really hairy," she says.

But even some of the catalog retailers are likely to find their systems somewhat lacking with respect to the unique demands of video shopping. "They may have the basic systems in place, but they don't all understand the power of television merchandising," says Stella Tavilla, executive vice president of MIS and transaction services

for the Home Shopping Network in St. Petersburg, Fla. "When you drop off a catalog, you can pretty well predict the volume of calls you'll get over the next three weeks. But we're constantly pushing things here

## MAKING YOUR DEBUT

**MOST LARGE AND MANY MID-SIZE** retailers are starting to think about getting involved in video shopping schemes, but few have the high-powered, tightly integrated order-taking, inventory and shipping systems needed to make them work. If you are a retailer whose ambitions outrun your IT capabilities, you have three basic options:

### **1. Build and operate all the needed systems yourself.**

The ones you have now probably can't handle thousands of phone orders per hour or allow you to guarantee to those who get through that their purchases will be on their doorsteps in three days. There aren't yet any off-the-shelf systems aimed at this nascent market, either.

■ **Pro:** If you do a good job, you'll have maximum control over the entire order-entry and -fulfillment process, and you'll have your finger directly on the pulse of your customers, inventory and suppliers.

■ **Con:** Even if you can afford to spend the millions required, you could end up wasting the money along with most of your IS department's time on a complex project that never quite works right.

### **2. Let a shopping service take orders; you do the rest.**

In this scheme—currently available to some retailers through video shopping giants Home Shopping Network and QVC, and likely to be offered by others in the near future—the shopping service relays to you the orders it takes from your customers so that you can fulfill them out of your inventory.

■ **Pro:** Allows you to focus your investments on inventory and delivery systems, while shopping services bear the cost of the massive telephone and order-entry operations—a cost they can leverage over many retailers.

■ **Con:** You'll need a good interface between the service's order systems and your fulfillment systems, or customers will face frustrating delays in receiving merchandise. In addition, you have less direct interaction with customers, potentially limiting your ability to understand them.

### **3. Let a shopping service do it all.**

The idea here is that the service takes all orders and fulfills them out of its own inventory of your merchandise—merchandise that you supply to it in large batches.

■ **Pro:** You don't need high-powered systems of any type, and your customers will probably get excellent service.

■ **Con:** Who needs you?

—D.H. Freedman



from minute to minute by what we say on the air. If we suddenly decide to announce we're going to offer free express air delivery for all products bought within three days of Mother's Day, our warehouses need to be able to deal with that."

QVC CIO John Link, based in West Chester, Pa., notes that call rates at the network routinely vary between 7,000 and 30,000 per hour and occasionally surge to as many as 200,000 an hour. What's more, he says, people shopping through television



**STELLA TAVILLA:**

*"There's nothing magic about building these systems. It just takes a lot of work and a lot of money, and the biggest retailers are in the best position to do it."*

are less tolerant of delays in customer service and product delivery than are catalog shoppers.

"We're dealing in instant gratification," he explains. "We've gone out of our way to set service levels that other companies will have trouble meeting." If competitors do catch up, he adds, QVC is prepared to spring ahead by reducing its 24-hour-turnaround time on shipping orders to 12 hours, for example, or by providing faster delivery to rural areas of the country through local depots.

The Sharper Image's Barriero acknowledges that his company's systems will probably have to be tweaked, at least, just to meet the needs of Catalog 1's early, non-interactive, relatively low-volume rollout.

He had a small taste of television's potency last year when some of his company's products and its 800 number were displayed for a few seconds on *The Oprah Winfrey Show* during a holiday-season show—order lines received some 30,000 calls. Among the changes he's planning: gearing up to handle call surges, speeding product shipments, shifting from weekly to daily sales analyses and tightening links to suppliers to enable more-rapid inventory replenishment. Unfortunately, he notes, the company will probably have to wait until the inadequacies of the existing systems clearly manifest themselves before investing in upgrades. "We'll just have to let the need justify the expenditures," he says.

**W**hen video goes interactive, any shortcomings in retailers' order-entry systems will become critical, says Mary Modahl, a senior analyst with Forrester Research. "Right now, the consumer interacts with a telemarketer from the company, and the telemarketer interacts with the product database, shielding the customer from the system's complexities and errors," she explains. "But with interactive shopping, your database is directly exposed to the customer, and you can't train or fire the customer. If the system is hard to use or if it's easy to make mistakes, you'll lose customers."

The standards for these interactions will be so high, Modahl adds, that few retailers will find their systems up to the task. And if it comes down to building a new generation of systems from scratch to meet these new demands, the advantage will be not with the catalog retailers but with the giant department-store chains like Wal-Mart Stores Inc. and K-Mart Corp. that have the resources to do it quickly and to do it right, she says. Home Shopping Network's Tavilla agrees: "There's nothing magic about building these systems," she says. "It just takes a lot of work and a lot of money, and the biggest retailers are in the best position to do it."

Fortunately for those retailers that aren't Wal-Marts, there may be alternatives to building new systems from scratch. One is the possibility of buying off-the-shelf, interactive-shopping-ready telemarketing, inventory-management and other systems from a third party. QVC's Link notes that his company got started seven years ago with a third-party direct-marketing system. But he also points out that the system ulti-





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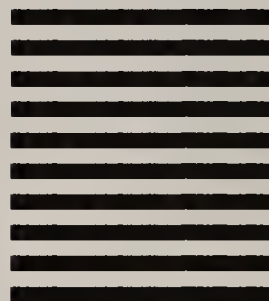
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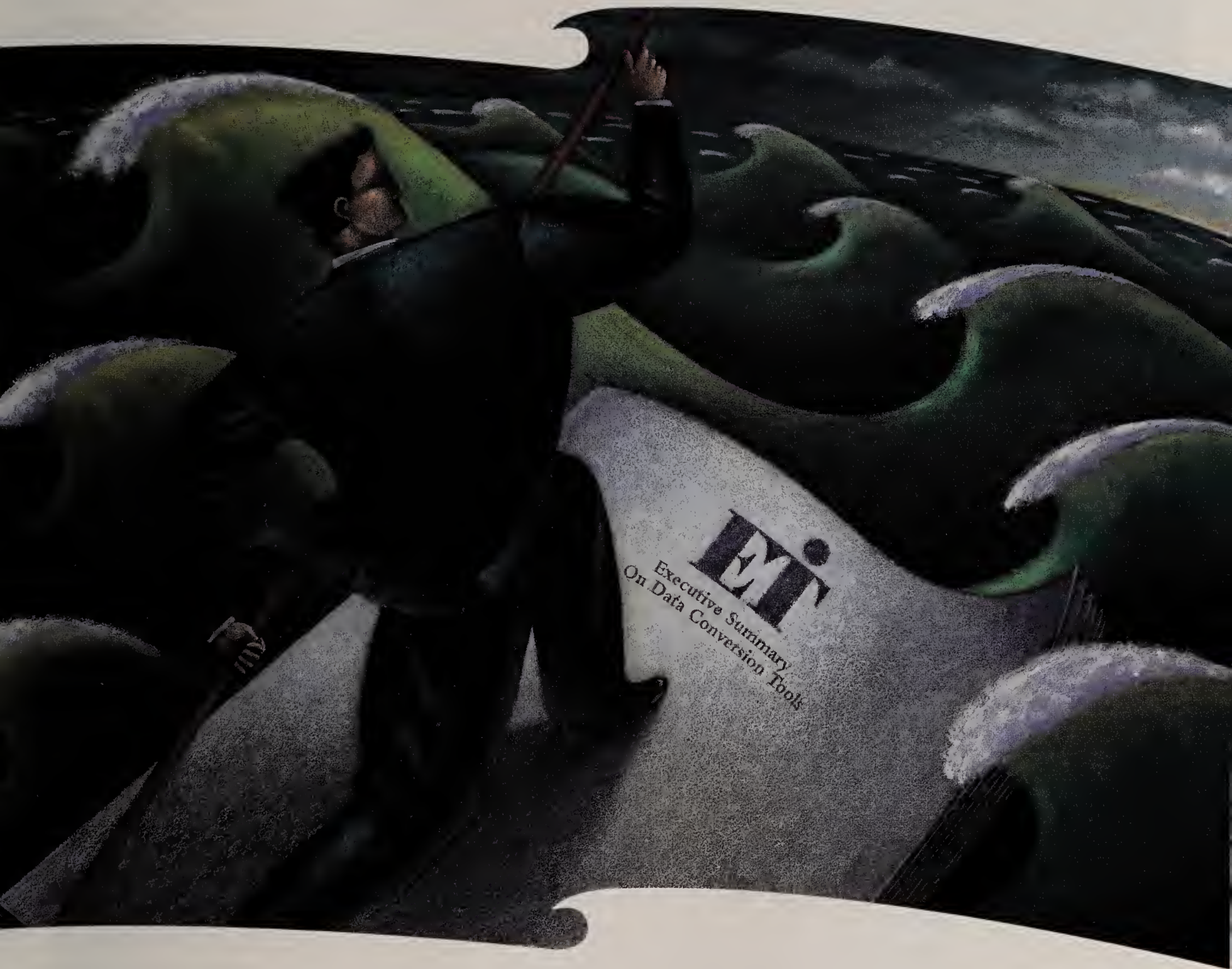
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**JOHN LINK:** *"We've gone out of our way to set service levels that other companies will have trouble meeting."*

mately needed complete reworking and that the relatively small number of players likely to jump into interactive video shopping in the near future doesn't make this business an attractive target for software developers.

Another option will be to let an established video shopping service provider handle all the logistics on behalf of the retailer. Under such an arrangement, the retailer would ship a large quantity of inventory to the service provider's warehouses, and then the provider would take the phone orders and ship the products itself. Home Shopping Network, for example, has had such an arrangement with Saks Fifth Avenue and plans to offer this option to all its retail partners in a new shopping service called The Television Shopping Mall. QVC has done much the same with some retailers. "This is a totally different business, with different systems needs, and the best way to get into it is to piggyback off someone else," says Ernst & Young's Shern.

There is also a sort of hybrid option, involving outsourcing the order-taking end of

the business to a video shopping service provider but keeping the order fulfillment in-house. Home Shopping Network already offers its services as a call center, hoping to leverage its investment in a call-surge capacity that is far beyond what most retailers can afford. Time-Warner also intends to offer call-center services to partners in the two interactive-shopping projects it's planning—one that might evolve from its Catalog 1 venture and one that will be independent. The trick to making that sort of arrangement work, notes Cooke, is to be able to integrate the provider's order-entry system with the retailer's fulfillment systems. "In the short term, you can try to jury-rig something together," he says, "but in the long term, we'll need some sort of clearinghouse that can take information from dozens of retailers' inventory systems and provide it to us in a standardized form." Going it alone will simply be out of reach for the vast majority of retailers, he adds, noting that Time-Warner and its partners currently have

"hundreds and hundreds" of systems people trying to work out some of the problems.

Finding the right degree of outsourcing for video shopping will depend on the type of retailer, says Forrester's Modahl. Eventually, two major types of retailers will succeed in video shopping, she says: the small and mid-size "boutique" retailers that offer a unique and highly focused selection of merchandise, and giant "shopping club" retailers that offer a huge selection of products among which customers can comparison-shop for price and features. According to Modahl, the boutiques can and should outsource as much of their order-entry and -fulfillment operations as they can because these retailers' value lies in their personalities. The shopping clubs, on the other hand, had better try to keep their systems in-house, she says. "Outsourcing may seem like a good move in the short run, but in the long run you'd be hanging yourself. If you're just shipping products from suppliers to the shopping service's warehouses, then it's not a big step for the service to start dealing with the suppliers directly.



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Why do they need you?"

Kurt Salmon's Cole, on the other hand, thinks that most retailers will end up relinquishing the order-fulfillment end, but not to shopping services; rather, suppliers will handle all of that, shipping directly to customers' homes. What retailers have to focus on is maintaining top-notch customer databases and ways of electronically linking to customers, he says—not only through home video shopping but also through in-store video kiosks that will allow cus-

**"WITH INTERACTIVE SHOPPING, YOUR database is directly exposed to the customer, and you can't train or fire the customer. If the system is hard to use or if it's easy to make mistakes, you'll lose customers."**

—MARY MODAHL

tomers to browse through merchandise electronically on high-powered multimedia systems set in a flashy store environment. But even in-store kiosk purchases would be fulfilled by shipping from a supplier's inventory. All in all, he says, retailing will undergo a massive transformation over the next 15 years—reason enough to avoid committing to any major systems efforts now that could restrict options a few years down the road. "All you know now is that the rules are going to be changing, so you don't want to overbuild. Flexibility will be the key."

While no one is eager to overcommit to new systems that may end up being irrelevant, there may be more danger in waiting too long to commit and ending up on the sidelines of a booming market. Right now is a particularly good time to take the plunge, says Modahl, noting that video shopping service providers like Catalog 1, QVC and Home Shopping Network are making it relatively inexpensive for companies to try video selling. "You can figure out the problems now at a pretty low cost," she says. "But when this takes off, experimenting will get very expensive." In other words, sneer now, pay later. **CIO**

*David H. Freedman is a freelance writer based in Brookline, Mass., and author of Brainmakers, published by Simon & Schuster.*

## THE VIDEO VANGUARD

*Companies announcing forays into video shopping include both traditional and catalog retailers. Among them are the following examples:*

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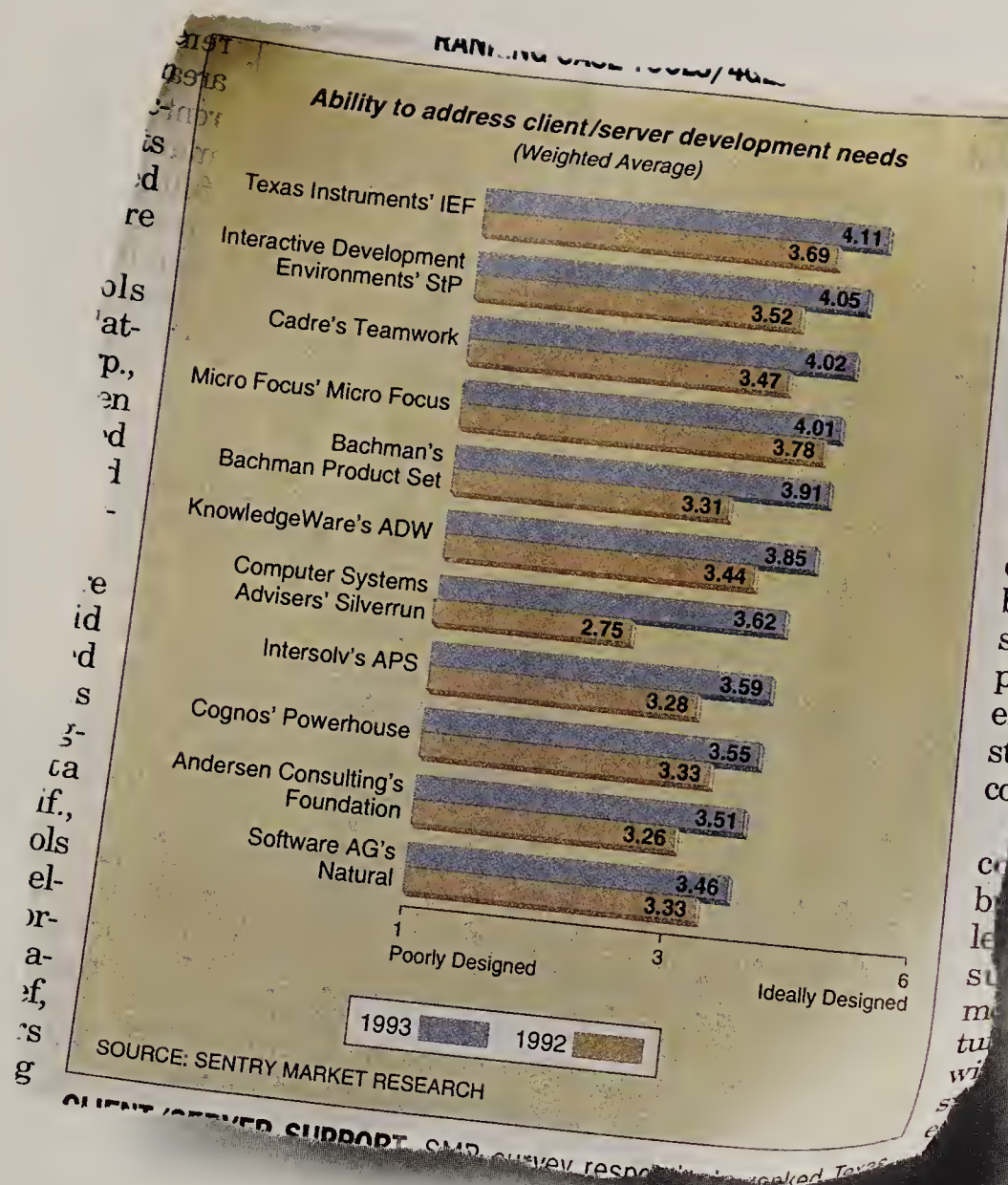
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## DECISION SUPPORT

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**T**oo much data, not enough information. It's an irony that vexes retailers more than most. A merchant with 300 stores, each with 20,000 items multiplied by colors and sizes, is looking at gigabytes of sales-related data. Mustering that much data into useful forms in a timely manner is so difficult that truly informed decision making is next to impossible.

To get their jobs done, inventory managers and merchandise buyers have grown more reliant on decision-support systems. These range from workhorse replenishment programs to neural networks, and their variety makes for another difficult decision—which type to try. One size does not fit all.

The more-basic forms of retail decision support—sales forecasting and inventory replenishment—are becoming a necessary part of doing business. To keep prices attractively low, discounters and moderate-price retailers must squeeze every stray nickel out of distribution and replenishment pipelines. Botched sales forecasting and misguided merchandise mixes will inflate inventory-carrying costs, create expensive over- and understock situations, and rapidly erode already low margins.

Mervyn's Department Stores, a Hayward, Calif., division of Dayton Hudson Corp., has been wounded over the

BY RICHARD PASTORE





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**VIVIAN STEPHENSON:**  
*Sometimes, retailers need to support human judgment, not usurp it.*





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last year by slow-moving inventory; California's recession hit the retailer of moderately priced apparel hard. But the bruises would have been bigger if Mervyn's hadn't implemented a transaction-processing system that encompasses 30 to 40 percent of its stock-keeping units, or SKUs. (The system is being applied to staple merchandise such as underwear, not to seasonal or fashion items.)

Analyzing the preceding 60 weeks of

**DENNIS GREEN:**  
*People are needed to catch and deal with merchandising exceptions.*

## Driving Forces: Mervyn's Department Stores

*To remain competitive in the moderate-price market, Mervyn's had to drastically reduce on-hand inventory in its 279 stores. An automated sales-forecasting and replenishment system cut inventory-related costs by \$60 million in its first year of implementation.*

sales history, Mervyn's client/server Planned Store Inventory (PSI) system predicts the level of inventory required for sales forecasts and upcoming promotions at the individual store level. It makes suggestions to inventory managers, who use the forecasts and analyses to decide what levels of merchandise to allocate to distribution centers and store locations. The PSI system runs on a symmetrical multiple processor (SMP) from Sequent Computer Systems Inc. It receives data from an IBM ES/9000 mainframe, where the inventory-planning system resides.

Mervyn's mission was to enable a just-in-time inventory supply that would maintain high in-stock averages, reduce overstock markdowns and trim the costs of carrying excess store merchandise. In PSI's first rollout year, 1993, it netted a \$60 million savings in inventory. In-stock merchandise levels rose to more than 95 percent for most merchandise, superior to the levels for SKUs not covered by PSI.

The system has not yet completely displaced the human element in staple merchandising, which is the long-term goal, according to Dennis Green, vice president of merchandise planning and logistics. For now, people are still needed to catch and deal with merchandising exceptions that pop up, and the data is not yet automatically integrated into all ordering and planning systems.

Grossman's, an \$800 million home-improvement-products chain, is a little further along the automation curve: It has handed over most of its store-replenishment decisions to a computer-assisted ordering system. The company had been spending 25 percent of its store payroll on replenishment duties, something it could ill afford with low-price giants like The Home Depot muscling in on its New England turf. "Our normal stores have 20,000 SKUs in them. Imagine the labor involved in reordering those SKUs each week," says Michael Bergman, vice president and director of MIS at the Braintree, Mass., firm. For many items, reordering could be delayed two or three weeks, risking bare shelves and frustrated shoppers.

Grossman's chose a transaction-based system that automates item-by-item sales forecasting for each store and processes the replenishment orders. The home-grown mainframe program receives sales



## Driving Forces: The Gap Inc.

*The rapidly expanding apparel retailer manages its divisions as separate businesses—The Gap, Banana Republic, Old Navy Clothing Co., Gap Kids and its international operations. This multiplied the combinations of data that had to be gathered and analyzed—too much for current spreadsheet applications to cope with. The company is building an information-warehouse program that will gather all sales-related data for access via a variety of packaged decision-support and analysis tools available to end users.*

data in real time from store terminals, calculates needs based on historical sales and forecasts, then orders appropriate quantities directly from suppliers. In the two years since implementation, the cost of store replenishment has dropped to 10 percent of payroll, Bergman estimates. The goal is to reduce it to nothing.

But automated forecasting and replenishment won't work marvels for every retailer. It's appropriate mainly for companies whose merchandise mix is fairly stable. Grossman's always stocks nails, hammers, tape measures; it's a given that they will be replenished, so human judgment isn't necessary. "The feeling is, let the machines do it," says Fred Rogers, principal consultant of retail and distribution industries for IBM Corp. in Chicago.

But humans are not so dispensable with more-volatile types of inventory (trendy fashions, seasonal merchandise), which do not follow the same consistent modeling rules as do staple goods. "We're dealing with a very short life, 10 or 12 weeks, and we don't necessarily intend to replenish," says Vivian Stephenson, Mervyn's vice president of MIS. Where human judgment needs to be exercised, retailers can choose systems that support and enable that judgment rather than usurp it.

For Mervyn's, the choice is its Decision-Makers Workbench, a client/server system that will also run on a Sequent machine, access an Oracle Corp. database and provide analysis tools being developed in Visual Basic. When completed later this year, it will collect sales information daily and provide 300 to 400 users with a toolset to manipulate data, analyze trends and generate what-if and other ad hoc reports. The Decision-Makers Workbench will integrate

**"THE PEOPLE  
you want to  
utilize the  
data are not  
technically as-  
tute. They are  
buyers and  
marketeers  
who should be  
spending their  
time in the  
marketplace,  
not poring  
over volumi-  
nous data."**

—TED  
GROSSMAN

with existing desktop utilities; users will be able to dump data into spreadsheets or send graphical reports to one another by electronic mail.

"With the workbench, you can ask it for the 10 top-selling items in Southern California yesterday, and it will give you the answer," Green says. "You can go in at a high level of data, drill down to more-specific information and have it communicate exceptions." To do this today, Mervyn's planners must slog through unintegrated data on separate systems and in paper reports.

**A**t The Gap Inc., "decisions are creative—you have to factor in fashion trends along with the historical sales statistics and weekly sell-through rates," says Bruce Watson, senior director of information administration at the San Francisco-based casual-clothing retailer. Rather than automating replenishment or forecasting, The Gap has chosen to gather its disparate data into an information warehouse, making it easier for managers to access.

In the future, merchandise-related data from various legacy sources will funnel into The Gap's mainframe-based IBM DB2 database, where it will be summarized and made available to more than 2,000 merchandisers, planners, analysts and store managers at 1,400 stores. Tools from Information Builders Inc., Comshare Retail (a division of Comshare Inc.) and Metaphor Inc. will be available for ad hoc querying and reporting, merchandise planning and merchandise control support later this year. Increased inventory turnover, fewer markdowns and improved productivity will pay for the decision-support investment, Watson says.

Another company choosing systems to assist its brain trust in data logistics is J. Baker of Canton, Mass. The retailer operates shoe departments leased in discount department stores as well as its own retail shops under names like Fayva and Parade of Shoes. "The system doesn't make decisions for them; it gives them the tools they need to manipulate data, retrieve it and do forecasting," says Howard Barron, administrator of planning systems. Baker implemented a mainframe-based version of Comshare's Arthur Merchandise Planning system.

With Arthur, users can analyze historical sales by item size and color and store chain and site to determine initial seasonal plans.









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"They can decide whether to rebuy items for those chains and when to bring them in," Barron says. They can also compare the effects of special promotions in the past and run what-if analyses to decide whether to re-run those promotions or make modifications.

**D**atabase mining is a relatively new and untapped decision-support option. It is particularly useful to retailers looking for help with forecasting and cross-promotion—a technique in which multiple types of merchandise are advertised or positioned together to encourage consumers to buy them in sets. Using artificial intelligence, it examines enormous amounts of raw data, "mining" it for all possible correlations among different elements. In retail, it will identify which types of merchandise tend to induce sales of other types. For example, it might show that people who buy bowling balls in sporting-goods stores will also pick up a pair of bowling shoes. Or, less obvious, a sale on tennis shoes in a discount store will also

**MICHAEL BERGMAN:**  
*Grossman's automated forecasting system has reduced the cost of replenishment.*

spur sales of suntan lotion.

Causality is implied in these correlations, but it doesn't always hold true. Two types of merchandise may experience seemingly causal sales spikes, but these could actually be influenced by a third factor, such as the weather. Only human judgment and statistical analysis can test the validity of causation. This limitation aside, database mining's claim to fame is its ability to stumble upon relationships that few planners would have anticipated, says Ted Grossman, professor of information systems at Babson College in Wellesley, Mass.

Not only does database mining help retailers identify targets for cross-promotion; it also lets them avoid marking down prices unnecessarily on products that have strong correlations; it would be redundant and costly to put both spaghetti and sauce on sale, for example. Most shoppers will come into the store for the spaghetti savings and buy the related item regardless of whether it's on sale.

Again, this type of decision support doesn't suit everyone. "Its usefulness is largely limited to databases that are extremely

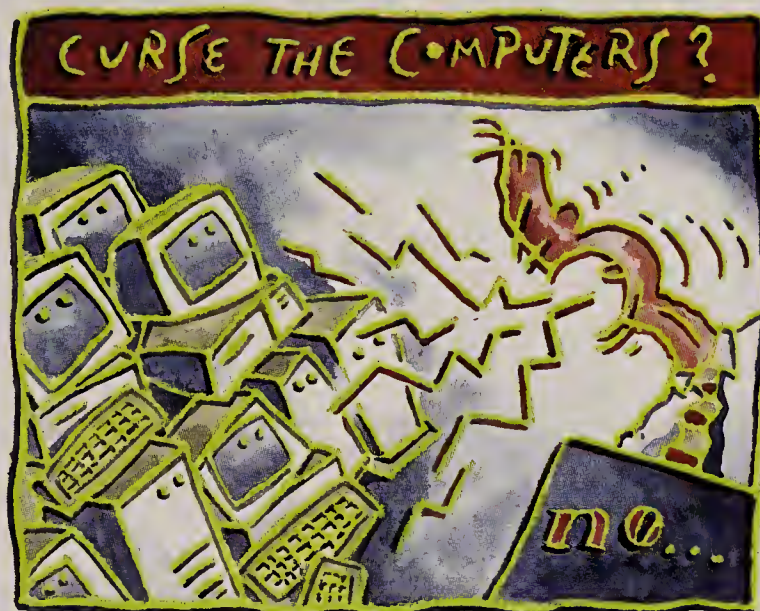
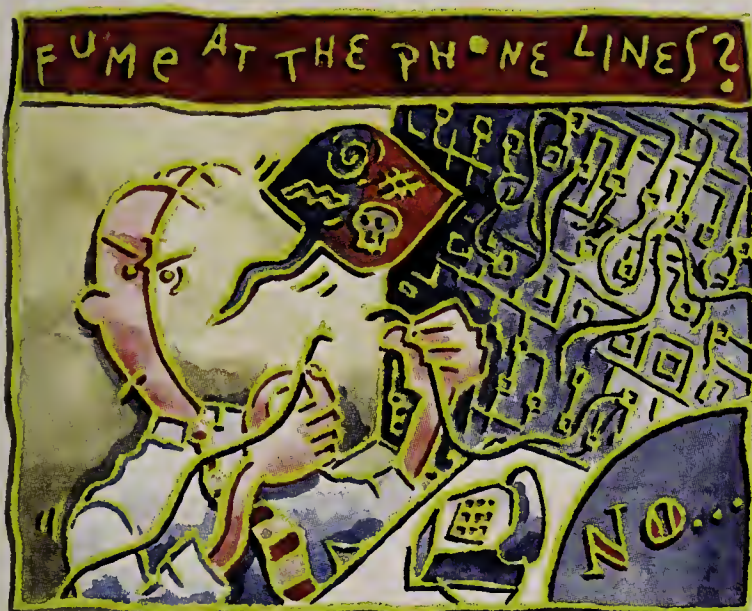
large—in the terabytes—and unmanageable," says Howard Dresner, program director at the Gartner Group in Stamford, Conn. Mining systems can also be very costly because they can involve hardware as well as software investments. For more-reasonably sized databases, querying and modeling tools might be a better choice, Dresner notes. And for very small or sim-

## Driving Forces: J. Baker

*J. Baker leases independent shoe departments in different department-store chains that often compete with one another in major markets. To differentiate the merchandise at the various chains, Baker's planners needed a deeper level of detail on what was selling in order to manipulate prices, promotions, styles and assortments. Point-of-sale data had been used only to report aggregate sales. Now a merchandise-planning system isolates and reports sales data down to the individual SKU (stock-keeping unit) for each store.*



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ple collections of data, relational databases might do the trick.

Database mining itself comes in more than one flavor. Retailers looking for something to churn out answers continually might choose the black-box technology of neural networks, according to Harve Light, president of Churchill Systems Inc., a consulting firm in Troy, Mich., that specializes in artificial intelligence. The neural net will continually search for correlations affecting sales forecasts and report what it finds. This might be most appropriate for a Wal-Mart, where things like disposable diapers and talcum powder might be cross-promoted several times a year rather than seasonally.

IBM is experimenting with its own spin on database mining: a set of tools for uncovering relationships and, additionally, the rules that govern their relative causality. The tools are meant to combine the performance of neural networks with the insights provided by traditional statistical analysis, Rogers says. They will identify any correlations found, as well as the rules that describe the relationships and their propensity to occur. This might be more appropriate for a store like Neiman Marcus, whose merchandise planners might want to study the causal rules to better coordinate cross-promotion of next spring's fashions and accessories. The system is now in testing at a number of catalog retailers, including Fingerhut. "Catalogers have the richest databases, so that's where you get the best short-term leverage of this technique," Rogers says.

**A**nother trend in retail decision support concerns customer demographics. In the past, retailers have had to infer who their customers were based on what was selling and what socioeconomic class predominated near the store. But this is like assuming you have mice because the cheese you left out in the pantry is gone in the morning. It could be rats or squirrels or a hungry spouse.

"You can make assumptions based on item movement, but it's imprecise," Rogers says. "You may know what color shoes are the most popular with your customers, but you won't necessarily know what types of products should be offered as associated merchandise. That will depend on demographics." It's also dubious to assume that the demographics of a community match those of the store patrons.

**THE MORE-  
basic forms of  
retail decision  
support—sales  
forecasting and  
inventory re-  
plenishment—  
are becoming a  
necessary part  
of doing  
business.**

Actual names and addresses of people buying specific items at specific stores go a lot further toward enabling accurate merchandise tailoring and micromarketing. "If you know age and income levels, for instance, you can know what price points to use and the kinds of colors and sizes to stock," says Grossman, who was a retailer before he joined the Babson faculty.

Another benefit of demographic decision support is bull's-eye target marketing. With a database of actual customers and their purchases, retailers can increase customer loyalty by sending them mailings promoting specific merchandise. "Rather than wasting money on broad advertising, you're targeting direct mail to your best customers, who are also your most lucrative customers," says David Falk, manager of marketing support at Datamark Software Inc., a developer of customer-demographics-collection and -tracking systems in New York.

Grocery retailers have exploited customer demographics more than any other type of retailer, collecting shopper names from surveys and determining purchase records from customers' use of courtesy or frequency cards. The goal is to increase shopper loyalty and achieve a higher average sale per customer visit. One reason grocers opt for demographic-based support more than other retailers do is that the average grocery store might see tens of thousands of customer visits per week—far more than a specialty or department

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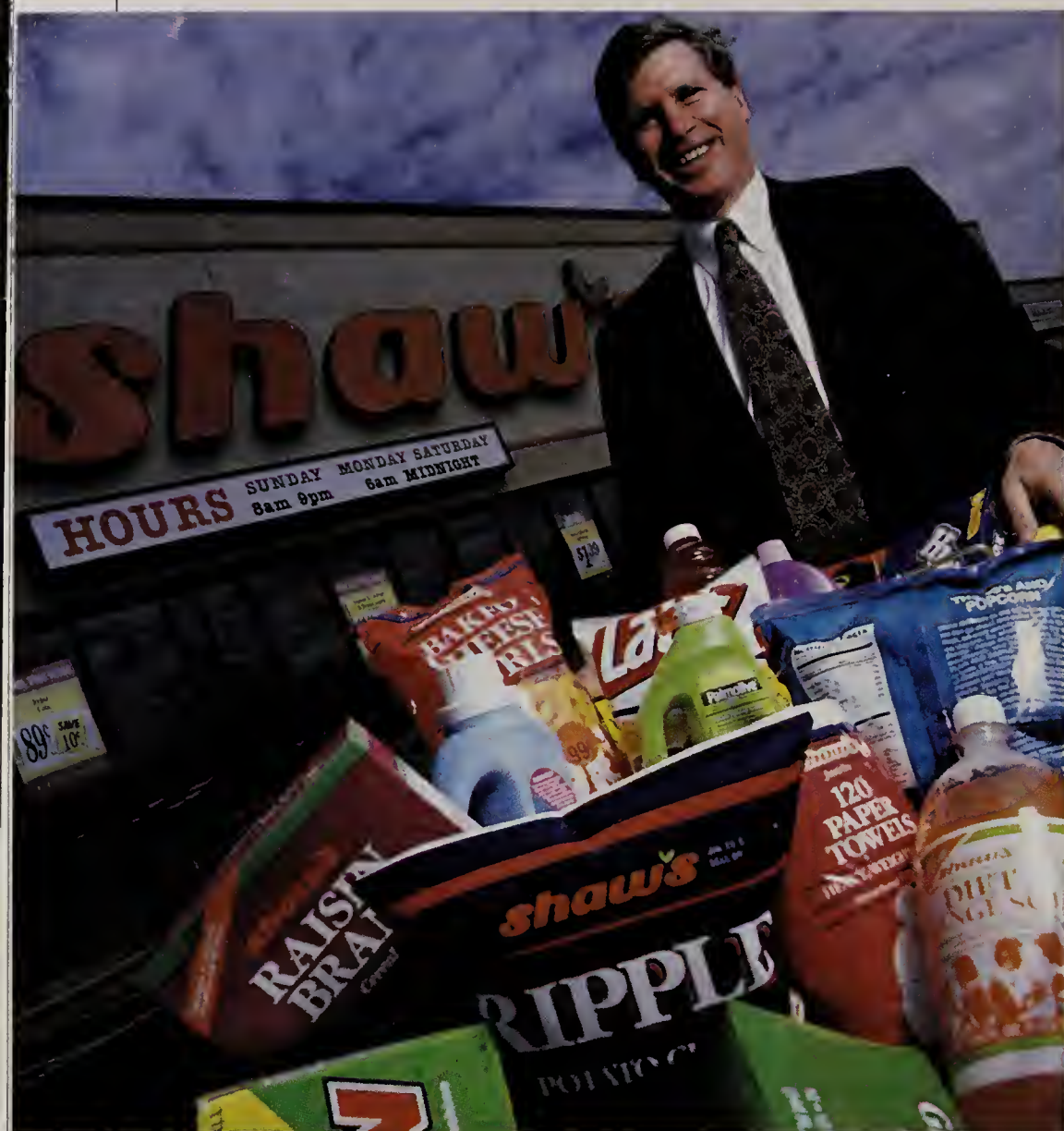
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store would. With numbers like that, even a slight increase in the per-visit sales value would have tremendous payoff, explains Paul Gannon, vice president of information technical services at Shaw's Supermarkets Inc., an 87-store chain based in East Bridgewater, Mass.

A typical grocery demographics application: Using personal purchase data, the system would identify customers who haven't bought from the meat department for the last few weeks and issue them a special coupon for chicken breasts and pork chops. Shaw's is now evaluating frequent-shopper software packages, and the op-

**PAUL GANNON:**  
*Grocery retailers can experience a tremendous payoff from customer demographics.*

## Driving Forces: Grossman's

*Under pressure from discount home-improvement retailers, the company wanted to eliminate labor costs involved in forecasting store sales and replenishing stock. It developed an automated replenishment system that analyzes sales histories for each store and automatically reorders stock at appropriate levels. Related labor costs have been reduced more than 50 percent.*

**GROCERY RETAILERS HAVE exploited customer demographics more than any other type of retailer, collecting shopper names from surveys and determining purchase records from customers' use of courtesy or frequency cards.**

tions out there range from \$200,000 to \$2 million investments, Gannon notes.

Other retailers are interested in demographics as well, including J. Baker and The Gap. "When we have our information warehouse built, we will look for outside databases with demographics and merge them with our own database," Watson says. "We'll also collect our own customer data in some cases."

Grossman's has amassed two years' worth of personal data on its professional-contractor customers and their purchases. Currently, Grossman's sales agents negotiate discounted prices for contractors based on their past purchase levels. The process is manual, however, and negotiated pricing for a given customer can vary from store to store and from sales agent to sales agent.

To prevent customer frustration, Grossman's is developing an expert system that will automatically set pricing for specific customers based on a growing database of their purchase histories. "All negotiated pricing will be available at all store terminals by customer name," Bergman says. "And that price will follow you wherever you go on the client/server network, no matter which location you chose to visit."

Whatever level of support system retailers decide on—fully automated forecasters and replenishment systems, database miners, query tools, demographics collectors or some combination thereof—IS should keep in mind the ultimate aim: maintaining close relationships with customers and employees, and vigilant oversight of merchandise. The plight of once-proud retailing giants—Macy's and Woolworth Corp. come to mind—should serve to underscore the importance of that decision. **CIO**



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INTERVIEW: LILLIAN VERNON

# Cataloging In

The doyenne of highly eclectic catalog retailing has risen to prominence on the strength of her nearly flawless instincts—what she calls a “golden gut.” But she concedes that IT has become an indispensable backup for

even the most finely honed instincts.

BY CAROL HILDEBRAND



If you're talking tchotchke, Lillian Vernon Corp.'s catalog is the place to go. You can buy anything from 910 feet of curling ribbon (“enough for a whole year's gifts, in vivid colors!”) to a teapot shaped like the Easter Bunny, to practical space-saving storage devices. Most of the items are priced painlessly: An average catalog offering costs \$17.

The catalog is designed to offer something for everybody, and with a database of almost 15 million customers, it seems clear that the New Rochelle, N.Y., retailing firm does appeal to a broad range of consumers. According to CEO Lillian Vernon, satisfying so many different tastes largely depends on an unerring instinct for choosing the right items to showcase in each catalog.

**LILLIAN VERNON:** “We have used technology to bring out our own specialty catalogs; by analyzing existing orders, we can see what special niches we might expand upon.”

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By relying on this instinct, Vernon has built the company she started in 1951 from her kitchen in Mt. Vernon, N.Y., into a \$195 million empire that shipped 4.5 million orders last year domestically and is now mailing to customers in Canada. The company has branched into specialty catalogs as well, offering a book of children's goods and one of Christmas items.

However, with new catalog retailers sprouting up faster than mushrooms after a rain, Vernon acknowledges that nowadays her company also relies heavily on technology to back up human instinct. The company has lagged on some technological fronts—it just installed toll-free calling at the end of 1993—but Vernon says her com-

**"WOULD A  
computer ever  
have identified  
our market as  
being what it is  
today? I don't  
think so."**



pany could not survive without IT. Senior Writer Carol Hildebrand recently spoke with Vernon about balancing old-fashioned instinct with today's more data-driven marketing approach, as well as the effect IT has had on retailing.

**CIO:** *You've said your most important role in the company is that of a merchant, having*

*a good feel for what sells. Do you think this type of work can ever be automated?*

**VERNON:** I don't think so. It still requires a feel for how a product should be pictured and promoted. There's a great deal of creative instinct involved; I call it a golden gut. And would a computer ever have identified our market as being what it is today? I don't think so.

While technology is very helpful, I always rely on my judgment. Computers give me answers but cannot give me solutions. However, MIS can and does play a vital support role. Through technology, we can get information on who our customers are, what they buy, how many items they average per year—you name it. In this respect, MIS drives our business and will constantly change it.

**CIO:** *So, the importance of technology has increased in retailing over the years?*

**VERNON:** Yes. At Lillian Vernon, the technology is as important as our people and our products. We are totally dependent on some form of technology to deal with a large volume of orders, complex offerings and changing consumer behavior and buying patterns.

Consumers expect that all data is always at our fingertips. For example, say a customer places a 12-item order with us and one of the items is back-ordered. It's not enough to just inform her of the back order; she will want to know precisely when that item will arrive. Consumers know that we have the data at our fingertips these days, and they expect us to provide it to them. They know that knowledge is power, and therefore they want all the knowledge they can get.

**CIO:** *How does this affect the way Lillian Vernon Corp. does business?*

**VERNON:** Competition for the consumer's dollar will force all retailers and catalogers to become more efficient, which is something that we constantly strive to do. This efficiency includes replenishing inventories more quickly, improving catalog response rates and lowering our distribution costs.

By analyzing data from our order-entry system, we figured out what our best sellers were a week after we mailed our Moth-





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**WHEN CUSTOMERS CALL** *Lillian Vernon Corp., they expect their orders to arrive complete and on time. They also expect to get precise information about a new product or their last order—instantly.*

er's Day catalog and could remove the unpopular products from future catalogs. [Lillian Vernon Corp. will mail 150 million catalogs in 22 editions in fiscal 1994.] Gut feelings are good, but analyzing solid information helps us to know what's best.

**CIO:** *When I think of Lillian Vernon Corp., I think of a company that appeals to its customers with a homey approach. It's like going to a church craft fair via catalog. How do you balance this image with your aggressive use of technology?*

**VERNON:** These are the 1990s, so while our customers appreciate our down-home image, they expect to receive their order complete and on time. They also expect to be able to call us and get precise information about a new product or their last order—instantly. So, yes, we're folksy, but we've adapted to the marketplace and the competition. For example, we've been steadily upgrading our national distribution center in Virginia Beach, Va., since it opened in 1988. We added a data center with an IBM 3090-200e and two AS/400s in '89, followed by a [new] customer-service center in '90 and a telemarketing center in '92. We've made major investments in call-center automation, order-administration

and -fulfillment systems. Everything is tightly networked, and each center's information is integrated, which gives us perhaps our biggest asset—a database of almost 15 million names.

**CIO:** *How does information technology affect what you do, personally?*

**VERNON:** I may not be able to run a computer myself, but I'm the first to tell you that I couldn't do without one. That computer makes us look good to the customer. I can get information from our computers about how many customers are buying certain kinds of products. This helps me to determine if we have the de-



**"GUT  
feelings are  
good, but ana-  
lyzing solid  
information  
helps us to  
know what's  
best."**

mand to spin off new specialty catalogs, as we did with "Lilly's Kids" and "Christmas Memories." I also begin to look at sales by product the moment each new catalog gets mailed and adjust inventories and pricing accordingly.

So, although I may not touch a keyboard myself (my administrative assistant does that for me), I use computers strategically to improve my business, to make it more efficient and streamlined.

**CIO:** *What do you see as the exciting trends in catalog retailing?*

**VERNON:** One big trend I like is that companies are improving customer analysis by using technologies such as demographic modeling to better predict what customers will want and when. The industry's nar-





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rower customer focus has led to increasing specialization in catalogs. The big-book catalogers such as Montgomery Ward [& Co. Inc.] and Sears [Roebuck & Co.] are closing or downsizing one by one, as retailing becomes more specialized and competitive. We have used technology to bring out our own specialty catalogs; by analyzing existing orders, we can see what special niches we might expand upon. We will be bringing out other specialty catalogs.

**CIO:** *With hundreds of different items, the basic Lillian Vernon catalog is anything but focused. Do you think the specialization trend will have a negative effect?*

**VERNON:** Our core catalog has a deliberate strategy. We've designed it to be reminiscent of an old-fashioned country store; it purposely does not have an index. So, it forces the customer to browse through many products in many categories. It's got an old-timey appeal, so I don't think that specialization will hurt it.

Also, because it is so broad, it's great for prospecting for new categories to specialize in. After

**"WE'VE MADE MAJOR INVESTMENTS IN call-center automation, order administration and fulfillment systems. Everything is tightly networked, and each center's information is integrated, which gives us perhaps our biggest asset—a database of almost 15 million names."**

**CIO:** *What do you see as disturbing trends for retail-catalog companies?*

**VERNON:** The privacy issue is one. By that, I mean people's fear that big government and big companies keep huge databases of private information about them, which is becoming a popular issue for debate. One upshot of this is

that there are several congresspeople with legislation pending to sharply curtail the practice of catalog companies renting each other's mailing lists because they think that's an invasion of privacy. However, I think that the real issue is not use of customer data so much as it is misuse. Lillian Vernon Corp. would never, for

example, rent our mailing list to a company that sent out a catalog that was offensive in some way. We are very careful to use our data properly. So, although these proposed laws may be well-intentioned, they could have a negative—and needless—impact on catalog retailers.

The second disturbing trend I see is the glut of catalogs that overfill consumer mailboxes. For example, there are currently more than 100 women's-clothing catalogs available. Too many me-too marketers with very similar merchandising lines can make catalog retailers as a whole look bad.

**CIO:** *What other venues for selling merchandise are you exploring?*

**VERNON:** Last year we were on QVC, the shopping network. I was on for an hour, talking about the company and its products, and I also did some show-and-tell of the products. It was a good first effort. We are in "Sky Mall" catalogs on the airlines, which is basically a compendium of catalogs that passengers can find in the seat pockets. We recently introduced our first catalog on a CD-ROM disk, and we also have six outlet stores and a wholesale division that specializes in premiums, incentives and corporate gifts. Finally, we're actively exploring our options in the area of shopping at home via television. **CIO**

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we saw a lot of people buying children's products, we started our specialized book of kids' products. Once somebody orders from the big catalog, we can use the data to more narrowly focus on that customer's wants and improve the chance of reorders.

**LILLIAN VERNON'S**  
*original ad, circa 1951. In fiscal 1994, the company will mail 150 million catalogs in 22 editions.*



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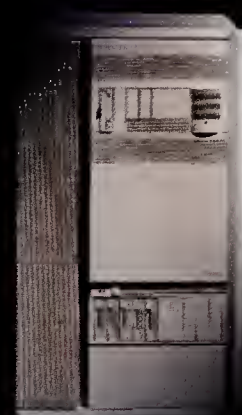
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1. "The CW Guide to Servers," Computerworld, March 22, 1993 and "The CW Guide to Servers and Superservers," Computerworld, January 31, 1994.

2. International Data Corporation, "Data General's Ascent in the UNIX Market," October, 1993

3. "Clash of the Drive Arrays," PC Week, October 11, 1993

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# Six Months of CIO

An index of all major articles published in *CIO* from January through June 1994, including a cross-reference by article type

Articles are numbered in sequence from the first issue of *CIO*. (See past December issues for guides to stories published prior to January 1994.) To help readers find articles of interest, we've added a cross-reference of categories at the end of the listing.

## DECEMBER 15, 1993/ JANUARY 1, 1994

### Special Issue: Power Sharing

**727. "Unconventional Wisdom"** (Page 24)—an interview with management guru Tom Peters, whose take on reengineering is anything but predictable. By Thomas Kiely



**728. "Five Uneasy Pieces"** (Page 34)—pitfalls of the five most current trends: empowerment, TQM, reengineering, downsizing and outsourcing. By the editorial staff

**729. "A Measured Success"** (Page 40)—determining technology's contribution to a company's well-being is an important part of the CEO's job. Second Opinions by Richard Pastore

**730. "Crossing the Line"** (Page 46)—what happens when a line manager becomes an IS chief or vice versa? By Thomas Kiely

**731. "Profiting from the Peace Dividend"** (Page 50)—some private-sector manufacturers are tapping into the scientific expertise of those at federal research labs. By David H. Freedman

**732. "Waves of the Future"** (Page 58)—newcomers to the tech-

nology scene hold considerable promise for business users. A State of the Art column by John Edwards

**733. "Made for Export"** (Page 64)—a Working Smart column on the benefits Raytheon reaped after installing export-management software. By Nancy Hitchcock

## JANUARY 15, 1994

### Special Issue: The ESPRIT Awards

**734. "Value Systems"** (Page 29)—an overview explaining the history of the ESPRIT awards.

**735. "A Clean Bill of Health"** (Page 32)—Complete Health Services Inc. is processing insurance claims in one-third the time using an image-based system. By Carol Hildebrand

**736. "A Valuable Eco-System"** (Page 36)—South Florida Water Management District uses a GIS to crack down on violators and boosts productivity as well. By Richard Pastore

**737. "The Critical Link"** (Page 40)—by practicing what it preaches, SynOptics Communications achieved stellar growth. By Megan Santosus



**738. "The Right Ticket"** (Page 52)—information technology improved the enforcement of parking laws for the Chicago Bureau of Parking. By Megan Santosus

**739. "Supporting a House of Cards"** (Page 58)—success for AT&T's Universal Card comes from a customer-service platform that delivers satisfaction and savings. By Deidre Sullivan

**740. "Putting the Finger on Fraud"** (Page 64)—L.A. County finds a way to staunch welfare fraud without scaring off the Department of Public Social Services' legitimate clients. By Nancy Hitchcock

**741. "Going for the Gold"** (Page 68)—participating in Motorola's internal quality contest turned two largely hostile divisions into one effective team. By Leigh Buchanan

**742. "The Full Spectrum"** (Page 22)—success of the IS function depends on a complete and balanced organizational structure. An Insights column by N. Dean Meyer

**743. "A Matter of Fax"** (Page 78)—recent developments in fax technology have opened up a new realm of business possibilities. A State of the Art column by Sarah Stambler

**744. "A Farsighted System"** (Page 90)—a Working Smart column on pharmaceuticals maker Allergan Inc., which is taking a focused approach to financial reporting. By Katherine Auer

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**745. "A Resounding Maybe"** (Page 34)—economist Stephen Roach explains where service companies ran amok in the past and how that's changing. An interview by Carol Hildebrand

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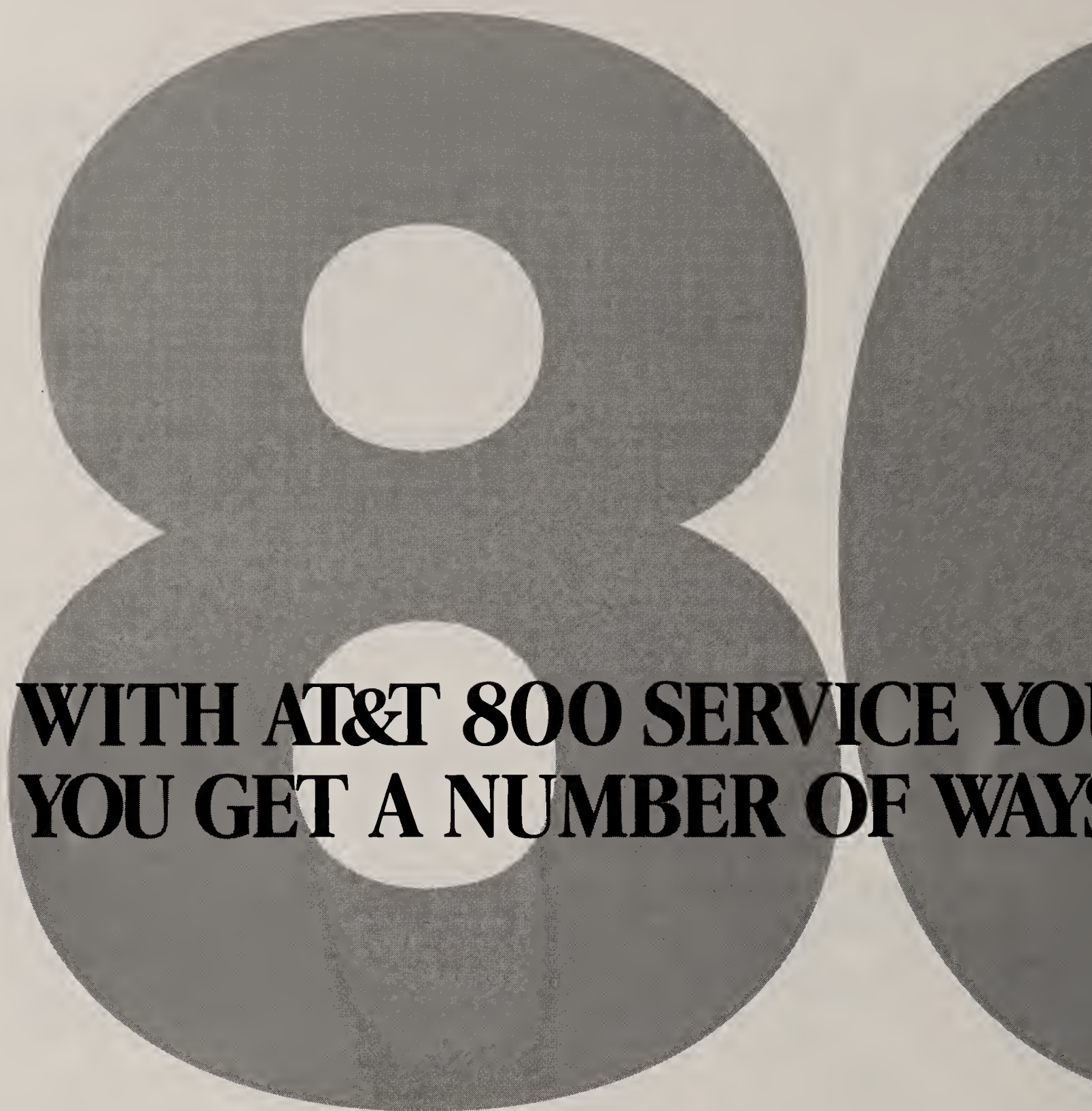
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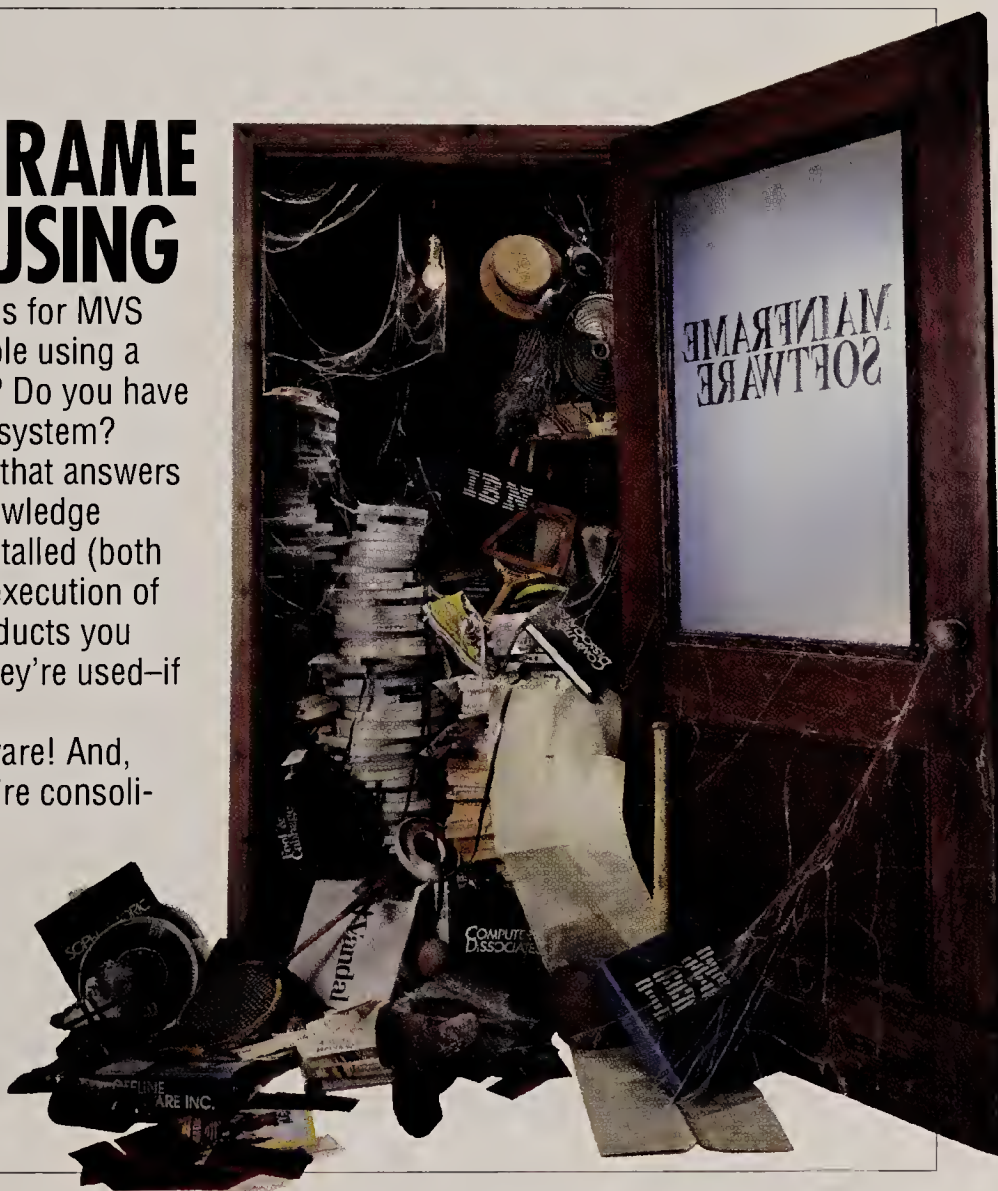
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# Dialing for Dollars

Thanks to better targeting techniques and closer integration with the whole customer-interaction process, a new crop of telemarketing tools is helping companies make the most of their phones

BY TRACY MAYOR

**I**t's 8 o'clock, Thursday evening. You're just sitting down to dinner when the phone rings. It's someone from a bank, asking you to sign up for a new low-interest credit card. Outraged, you begin to sputter into the phone. You already have a credit card from that bank—or you did until yesterday. After a long, nasty battle with the customer-service department, you demanded to have the card canceled. Now the bank wants you to sign up for a new one? The caller listens to your tirade, then continues in a monotone, "If I could just verify your name and address...." You do what multitudes before you have done when confronted with unwanted, inappropriate telephone calls: You hang up.

If telemarketing professionals and software vendors have their way, this solicitation scenario will soon be a thing of the past, along with cold calls, rigid call scripts and intrusive hours of operation. Instead, they're aiming to replay such scenes a little differently: When you phone the bank to lodge your complaint, a customer-service rep calls up your active account file and resolves the credit dispute

then and there. One day later, another bank representative calls you, checking to make sure the matter was settled to your satisfaction. He inquires about the home-equity loan you also have with the bank, and only after making sure everything is satisfactory there does he mention the new credit card. In reviewing your account, he noticed you're still holding a credit card with 18 percent interest charges, and he's calculated that switching to the new card could save you some \$700 annually. Would you be interested in hearing more details? Sure, you say, fire away.

Many companies are turning to a new breed of telemarketing software to achieve this type of finely tuned, highly personal customer interaction. Software systems from companies such as Aurum Software Inc., Brock Control Systems Inc., Early, Cloud & Co., Information Management Associates (IMA) Inc. and others allow firms to transform their traditional cold-call phone banks in two important ways: first, by automating and customizing many aspects of telemarketing that were traditionally performed manually; and, second, by integrating telemarketing so closely with customer service and sales that the lines between them become almost blurred.

Indeed, telemarketing software, which traditionally managed outbound calls, and help-desk/customer-service software, used for inbound calls, are converging into a single market, explains Hugh Bishop, manager of applications research at Aberdeen Group, a Boston-based research and consulting firm. "The whole customer-interaction market is really booming," he says. Software publishers are offering multimodule packages that tie together formerly disparate pieces of the telephone-interaction process—





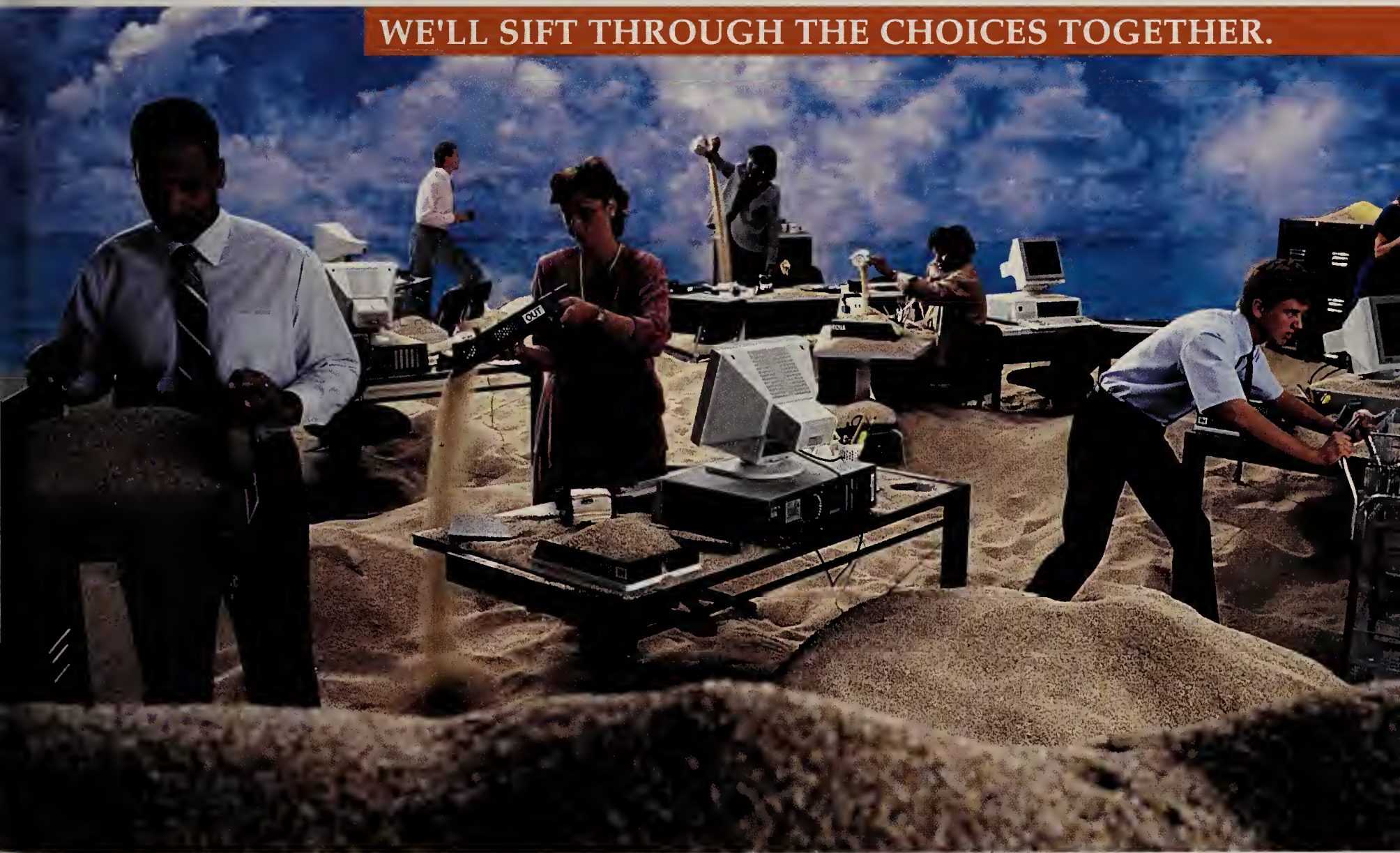
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including telemarketing, sales and customer service—by building them all around a centralized database. “The ability to link these [functions] together is key. Maintaining separate databases makes no sense,” Bishop says.

### **The Right Number**

An automated telemarketing system typically offers such functions as inbound and outbound call processing, list management, scripting, user monitoring, literature fulfillment, call-back scheduling, reporting, call logs, auto-dialing, contact management and sales forecasting. By itself, this kind of automation increases efficiency; when used in conjunction with a centralized customer database, it allows organizations to build or acquire databases of target consumers, prequalify leads over the phone rather than in person and otherwise highly customize their entire telemarketing and sales effort.

Because information can be better managed, “you’re not selling aluminum siding to people who don’t own houses,” says Robert Zeitlinger, a spokesman for the American Telemarketing Association (ATA), headquartered in Los Angeles. Automated telemarketing systems and customer or contact databases can dramatically increase the number of sales “hits.” “With database marketing, you already know something about the person you’re contacting,” Zeitlinger says. “You have to call fewer people to close the same number of sales.”

This one-two combination of automation and integration has caused corporations to rethink their approach to telemarketing, says Kristie Jones, product marketing manager for Edge at IMA in Fountain Valley, Calif. “Telemarketing was strictly outbound-oriented, focused on making as many calls as possible, using scripts. That isn’t good enough anymore.”

Competition is a big part of the reason. Rising costs and tighter profit margins are forcing an ever-increasing range of companies to rethink their sales strategies, making the telephone rather than the expense account the preferred way to land a sale. “Back in the ’80s, things

came a lot easier to people, and they didn’t have to work hard for sales,” says Brett Knights, system administrator at Newtrend, a financial-software firm in Orlando, Fla. “Now, in the ’90s, we have more competition, profit margins are much less, and we have to make more sales to make the same money. So we’re asking, ‘How can we build up our telemarketing?’ ”

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## **Because information can be better managed, “you’re not selling aluminum siding to people who don’t own houses.”**

—Robert Zeitlinger

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This shift in approach has drawn a new breed of organization into the telemarketing industry. Smaller or more-specialized companies that may not have tried telemarketing in the past are now more able and willing to do so, particularly for business-to-business sales. “Our customer base is very horizontal,” says Mary Committe, vice president of marketing at Brock Control Systems Inc. Companies in a variety of industries, including manufacturing, high-tech, financial services, communications and hospitality, are among the users of the Atlanta firm’s six-module Brock Activity Manager Series.

### **Know Thy Customer**

At the heart of integrated telephone-contact systems are centralized databases that allow organizations to make all customer information—or most of it—available to any employee who has contact with customers or potential customers. The result is higher productivity within the organization and greater customer satisfaction. Newtrend, which markets its financial software to commercial banks, savings and loan institutions, and credit unions, continues to reap the benefits of its early conversion to integrated telemarketing. Be-

cause the firm has been using the Brock Activity Manager Series since 1986 to automate its sales, telemarketing and client-support operations, “we now have eight years of history on each [client] institution,” says Knights.

All three departments have access to the same files in the same database, Knights explains. “So, if telemarketing initiates a call every three months, we can talk to [customers] about their growth, and we can say, ‘We understand what you’ve been going through.’ ” Telemarketing shares this prequalification information with sales, which uses the data to customize its sales pitch. In turn, the sales department tells the customer-support department exactly what the customer was sold and what promises were made.

This deeper level of understanding about the customer helps Newtrend turn leads into sales and turn first-time customers into repeat customers, Knights says. “There’s an opportunity for us to shine a little bit brighter than the competition. The impression is that we have our act together, that the left hand knows what the right hand is doing.”

### **Inbound Calls into Outbound Sales**

As the concept of telemarketing as an outbound-only activity shifts, companies are discovering that it works best when integrated with other marketing methods to support field sales or reinforce a direct-mail campaign by providing a toll-free number for interested customers to call, for example. More specifically, organizations increasingly are using telemarketing software to track incoming calls—requests for customer service or responses to an 800-number advertisement—retain the customer data and then transform them into outgoing sales via a coordinated telemarketing effort, says Roberta Black, a member of the ATA board of directors and president and CEO of Dialogue Marketing, a telemarketing and direct-mail service agency in Southfield, Mich. “With a [toll-free] line, the consumer in effect raises his hand and self-identifies,” she explains.

First Bank System Inc., a \$26 bil-



People say  
it has the power to meet your needs today

Some think  
it will guide you to the future

Others believe  
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*A three-part series*

# INFORMATION IS THE SOURCE

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MEETING  
THEIR EXPECTATIONS,  
AND ABOVE ALL,  
HELPING THEM  
INCREASE  
COMPETITIVENESS.”

*Hank Holland  
President  
Dun & Bradstreet Software*

While most vendors in this industry see themselves as technology or service companies, for Dun & Bradstreet Software these are the intermediate steps. D&B Software views the key issue as information: how to give its customers timely, reliable and relevant information. The company's client/server solution, the SmartStream® Series (including SmartStream Decision Support, Financial Stream, HR Stream, Manufacturing Stream and Distribution Stream\*) provides enterprise-wide technology that helps customers turn information into better decisions — decisions that drive customer profitability and competitiveness.

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## MOVING UP THE DECISION VALUE CHAIN

D&B Software's unique position grew out of the 1990 merger of Management Science America and McCormack & Dodge, two companies with over 50 years of combined experience and proven expertise in providing 40,000 transaction-oriented business solutions to over 10,000 customer sites. To this background in technology and customer service, D&B Software adds the 150 years of experience of its parent, The Dun & Bradstreet Corporation.

With over \$4.7 billion in revenue, D&B is the world's largest provider of value-added business information, software and decision support services. The company's overall mission is to make information available, convenient and useful to its thousands of customers around the globe.

D&B companies include Moody's Investors Service, A.C. Nielsen, Reuben H. Donnelly, IMS International and Dun & Bradstreet Information Services, all of which provide businesses with external information crucial to their success, such as credit reporting and market analyses. D&B Software helps customers gain value from their internal information. Just as a company like A.C. Nielsen turns field surveys into competitive marketing information, D&B Software's solutions let customers turn basic business transactions into meaningful input for decision-making.

“Our position as part of The Dun & Bradstreet Corporation gives our customers an unparalleled opportunity to leverage both internal and external information,” says Holland. The SmartStream Series provides the integrating platform — the place where customers can analyze business information from all sources. It is a process the company calls “moving up the decision value chain,” the path from raw data to valuable knowledge.

By all measures, D&B Software finds that this approach is working for its customers. The company has the highest customer-retention rate in the industry, with over 90 percent. D&B Software has also been cited by a leading industry publication for outstanding service and support three years in a row. Over 60 percent of D&B Software's customers have said that the company is strategic to the success of their businesses. “We have received this recognition because of the methodologies and processes that we have put in place,” says Holland. “That work is paying off for our customers.”

For example, Weyerhaeuser, the \$9 billion forest-products company, recently chose D&B Software's HR Stream to integrate information about its 40,000 employees that was spread among human resources personnel at 100 locations. The business problems they faced were poor access to enterprise-wide

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WHILE INCREASING  
THE QUALITY AND  
ACCURACY OF OUR  
INFORMATION."**

*Cliff Hall  
V. P.  
Information Technology  
Weyerhaeuser*

information, and a lack of standardized definitions and technology around data for human resources applications. HR Stream, running over a client/server network, provided the answer. "It gives us wide accessibility to our human resources data across the company and enhances our ability for making sound business decisions," says Cliff Hall, vice president, Information Technology, Weyerhaeuser.

### STRATEGIES FOR THE CUSTOMER

While these successes are due in large part to the technology and service expertise D&B Software brings to the market, they are also the result of simply "practicing what you preach." At its inception, D&B Software started with a clean slate, combining the internal information about its capabilities with the external information about what its customers needed from technology solutions.

D&B Software's own use of integrated information for decision-making led to the creation of a strategy that directly addresses customer requirements. The company found that its core competencies answered four key customer needs: information access for decision-making, flexible systems that adapt to business process change, enterprise-wide data integration and open technology choices.

These four needs became the driving forces behind D&B Software's new class of business solutions, the SmartStream client/server platform. The company designed this product line to give customers:

- A transaction-processing solution that efficiently gathers internal business information, combined with the decision-support tools that make the information more effective;
- Technology based on the workflow among real users, real data and real processes, providing the means for customers to improve business processes to suit their individual needs;
- An integrated system for handling all the information generated and used by a business, rather than traditional applications built for separate departments and functions;
- An open technical architecture that lets customers implement the approach that matches their resources and needs, from comprehensive client/server distributed applications to add-on tools for mainframe transaction systems.

Says Holland: "Finding the best answers to our customers' questions keeps D&B Software in a leadership position. But we just don't sit back and wait for the questions to be asked. We work continually to improve the products and services that add value to our customers' businesses."

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lion bank-holding company headquartered in Minneapolis, is one organization that fits Black's profile. The bank initially purchased the Teleservicing Control System (TCS) from Early, Cloud of Newport, R.I., to manage its inbound customer-service needs, according to Bernard M. McGarrigle, vice president and manager of emerging technologies. First Bank liked the software's ability to interface with its existing legacy databases and tie into its Rolm telephone system. Recognizing that "customer service is customer contact," the bank is now looking at the Early, Cloud system as "a wonderful opportunity to leverage [inbound] calls into sales," McGarrigle says. First Bank has brought some outbound telemarketing projects in-house and will eventually use the system to collect inbound responses to direct-mail campaigns.

Aurum Software of Santa Clara, Calif., which markets a five-module customer-resource planning system, recently released new versions of its TeleTrak and SalesTrak modules, both of which have been enhanced to support team selling. Because the software is client/server-based, salespeople running SalesTrak at remote sites can dial in and access the same updated information that office-based employees see with TeleTrak, explains Mike Barnwell, director of product marketing for sales-force-automation applications. The modules are now more closely integrated to support team selling, where both inside sales and field personnel work on a project, Barnwell says. Managers can effectively link inside and field sales with the two modules to determine how information gets disseminated, assign tasks or to-do lists for the group and create action items.

On the telemarketing side, Aurum has attempted to rework conventional tools to make them more flexible. Call scripting, for example, which traditionally involves a rigid question-and-answer format that many customers (and telemarketers) find off-putting, is now more free-form. Telemarketers use a script but are also able to establish a more fluid, "relationship-type sell," Barnwell

says. "Nobody wants to drive a customer who's not amenable to it through a rigorous question-and-answer session."

Call-center managers and telemarketers say they put great stock in a system's flexibility, particularly in the face of changing market needs

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**"If you strip away all the fancy words, telemarketing is a human being talking to another human being."**

*—Roberta Black*

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and shifting customer concerns. Ray Somera, systems manager at Amoco Telebusiness Center, says programmability topped his list of needs when the division went shopping for telemarketing software five years ago. The Telebusiness Center, a division of Amoco Oil Co., in DeKalb, Ill., chose IMA's Edge system because of its stability and flexibility. "In Amoco, as in any large company, it can take weeks or months to make changes at a corporate level. But in telemarketing, we're not afforded that luxury," he says. With Edge, "we make changes in days or even hours, and we are totally self-sufficient. We receive no support from MIS."

Being able to work with Edge's proprietary database, which Somera finds "very flexible," rather than Amoco's mainframe database increases the productivity of the telemarketing staff, an outbound-focused unit that sells credit-card and motor-club memberships and other ancillary Amoco products. "We can make global changes to the way we do calling based on data we've analyzed internally from the central [Edge] database," Somera says.

#### **The People Factor**

Software vendors and telemarketers alike take pains to emphasize that automation and integration shouldn't eliminate human beings from the process. As large telemarketing bureaus

discovered several years ago, the vast majority of consumers react negatively to recorded voices (officially called automated dialing recorded message players) on the other end of the line. And for companies seeking to build long-term business-to-business relationships, the human factor can be even more critical. Clients need to feel connected to the organization, regardless of what technology is being used to streamline that relationship. The key, says ATA's Black, is to automate the process to make the most of your human assets. "If you strip away all the fancy words, telemarketing is a human being talking to another human being, although automation does play a role and enhances productivity," she says.

Companies automating or integrating telemarketing for the first time should pay attention to the "people factor" within the organization as well. Introducing a telemarketing system successfully means ensuring that salespeople and upper management are behind the move, as Larry Szambelan, vice president of information systems at MicroAge Computer Centers Inc., has discovered. Before the Tempe, Ariz., computer reseller could implement Early, Cloud's TCS, Szambelan and others needed to sell the idea of a centralized database to people in the organization. "We had 12 different client databases, some on individual workstations, some on WANs," says Szambelan. "We needed to convince everyone that it was important to have a consolidated database." Adopting Early, Cloud's system—and getting down to a single client database—allowed MicroAge to take a team approach to administering to the needs of its 15,000 franchisees.

Now that the inbound side of the operation is up and running smoothly, Szambelan says MicroAge is undergoing another shift as it gears up to begin outbound telemarketing to its clients. "Before, we were inbound order takers. We want to change our philosophy. We want to get to the point where we're not just taking orders, we're pursuing orders." 

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*Tracy Mayor is a freelance writer and editor based in Salem, Mass.*



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# Communication Protocols

Cultural misunderstandings can diminish the ability of U.S. and Japanese businesspeople to work together. Learning some basics could help prevent embarrassing and potentially damaging faux pas.

BY ANNE STUART

**I**f you've ever seen the film *Gung Ho*, a comedy starring Michael Keaton, you already have a good idea how not to conduct business with the Japanese.

Keaton plays a laid-off laborer in a rust-belt community about to disappear from the map after its last factory is shut down. In a desperate gamble, Keaton goes to Japan to lobby automakers there to open a U.S. division in his hometown. Despite committing every known etiquette error, he succeeds. Soon after, grateful townspeople welcome their new Japanese employers. But the relationship sours as each side misses one cultural cue after another, ranging from American inability to understand Japanese corporate loyalty to the Japanese donning uniforms for a casual softball game.

En route to its Hollywood ending, the movie offers many fascinating glimpses into Japanese business culture. For that reason, it's among the tools that Hiroki Kato uses in his seminars teaching Americans how best to do business with the Japanese.

Kato's expertise in American-Japanese communications evolved over

a lifetime of shuttling between the two cultures. A native of Nagasaki, Japan, he moved to the United States as a student in the late 1960s. Currently based in Fremont, Calif., as vice president of Asian development for Iomega Corp., Kato previously taught Japanese at Northwestern University in Evanston, Ill. With his American-born wife, attorney Joan Kato, he is author of *Understanding and Working with the Japanese Business World* (Prentice Hall, 1992). He teaches his intensive seminars privately and at Northwestern's J.L. Kellogg Graduate School of Management.

As American and Japanese companies globalize, undertake joint ventures or buy each other out, managers may find themselves baffled or intimidated by the foreign business culture. But Kato says it doesn't have to be that way. With a little homework, he says, Americans doing business with the Japanese can avoid embarrassing and potentially costly mistakes.

In one recent seminar, Kato led executives from a variety of industries through Japanese business etiquette, customs and expectations for a variety of situations, including:

**Arranging a Meeting:** "Cold calling" is unacceptable in Japan. Serious long-term relationships require face-to-face introductions, usually arranged by a third party called a *shokainin*. Ideally, Kato says, the *shokainin* is a respected professional who knows both parties and can help shape the discussion. However, the role can also be performed by officials of certain Japanese banks, the American Embassy or the Japanese External Trade Organization, which has offices in many U.S. cities.

Typically, little business is discussed in that first meeting. Instead, expect to engage in small talk about



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families, hobbies and sports. That's because, in Japan, personal interests are inseparable from professional ones. Also, the workday extends well into the evening; expect to continue talking over dinner and drinks. Read up on Japanese dining customs to avoid faux pas such as putting soy sauce on white rice, filling your own glass, sharing food on chopsticks or offering to split the check.

**Attire:** Japanese professionals tend to dress in formal, dark, expensive suits. Americans will fare better if they, too, wear conservative, well-made clothing. The premium on quality extends to accessories: Americans who want Japanese respect should avoid using cheap pens and disposable lighters.

**Business Cards:** U.S. executives typically trade business cards at the end of a meeting, tucking them away without a glance. Caught without cards on hand, Americans might jot essential information on scrap paper for future reference.

Japanese executives, Kato says, never forget business cards. Known as *meishi*, cards are exchanged right at the start of a meeting, before anybody says a word or sits down. *Meishi*, which should be in pristine condition and carried in a high-quality container, are presented and received face up with both hands. In a group, the highest-ranking individuals exchange cards first.

In presenting *meishi*, Kato says, Japanese executives are literally presenting themselves; thus, it's important to read over the information before putting cards away. It's considered rude to stash business cards in a back pocket.

Most Japanese who do business overseas carry bilingual *meishi*; Americans regularly conducting business in Japan should do the same. Bilingual printers can be found in many American cities.

**Protocol:** In Japan, the highest-ranking person always walks in front and receives service first. Kato says some Japanese executives are light-years behind Americans in acknowledging women executives, so if the top-ranking American manager is a woman, her male colleagues should make it clear she's in charge.

## **At the first meeting, expect to engage in small talk about families, hobbies and sports.**

**Forms of Address:** Traditionally, Japanese adults rarely use first names at work, Kato says. Unless asked to do otherwise, Americans should keep it formal. Use American courtesy titles and family names (Mr. Tanaka, Ms. Tanaka, Dr. Tanaka) or the Japanese form of address, the family name plus *san* for both men and women ("Tanaka-san"). Don't use both; "Mr. Tanaka-san" is redundant.

**Bowing:** Japanese executives may bow several times while arriving at or departing from a meeting, with deeper and lengthier bows indicating progressively greater degrees of respect. That's handy to know, Kato says, but it doesn't mean Americans need to follow suit. "They know you are American. Just shake hands," he says. However, there's one situation in which only a bow will suffice, even for an American: when apologizing. Even modern Japanese won't view an apology as sincere if it isn't accompanied by a deep bow.

**Gestures:** Don't be put off if Japanese executives stare at the ceiling or floor or close their eyes for several minutes. Americans view direct eye contact as a sign of honesty. Japanese generally consider it unacceptably aggressive.

Like everybody else, Japanese sometimes communicate with gestures. Americans shouldn't imitate them, Kato says, but may find it useful to understand what certain gestures mean. An open hand held vertically in front of the chest means "excuse me"; if fanned from side to side, it means "no, thanks."

Some American gestures have different meanings in Japan. The "OK" symbol—thumb and finger in a circle—indicates "zero" or refers to coinage. An upward-pointing thumb means "well done" to an American, "my boss" to a Japanese. An outstretched arm with a hand waving downward looks like "goodbye"; actually, it means "come this way."

**Personal Contact:** Don't be offended if a Japanese executive backs up after shaking hands. Typically, Kato says, Japanese like more personal space than Americans. Other than hand-shaking, physical contact should be avoided. Patting someone's back is especially rude.

**Negotiations:** Japanese executives sometimes sit silently for minutes at a time, a strategy Kato says indicates anything from neutrality to disagreement. As hard as it may be, resist filling the void. "Don't say anything," Kato says. "Just wait."

Decision-making styles also differ. Americans tend to decide quickly and implement slowly. In Japan, it's the other way around, and executives may cover the same ground repeatedly before reaching a conclusion.

Americans also must realize that Japanese executives often say "yes" to indicate "I understand" or "go on." And, Kato says, they often say "no" so diplomatically that Americans don't realize they've been refused. To an American executive, "we'll do our best" sounds like "yes," and "it's difficult to say" means at least "maybe"; to a Japanese, each is a flat-out no. Such ambiguity isn't intentionally cryptic, evasive or dishonest. Instead, Kato says, it reflects the cultural tradition of "saving face" for the person being turned down. Listen carefully.

**Gifts:** Gift giving is a critical Japanese business ritual. Some rules: Always wrap gifts. Realize they may be gently refused a few times before they are accepted, and they may not get opened in your presence. Don't expect a thank-you note, but count on an expression of gratitude at your next meeting—even if it's years later.

Japanese travelers customarily bring back *omiyage*, or souvenirs, for everybody they know. Kato says Japanese visitors will appreciate help finding places to shop.

Finally, Kato says, it helps to understand a few values underlying every facet of Japanese life, particularly *kao*, or the importance of saving face, and *wa*, harmony. Like Michael Keaton, if you understand the former, you'll find it easier to achieve the latter. 



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# FRONTLINE



BY PORTIA ISAACSON

*If your meetings are more notable for time wasted than ideas generated, a new category of software tools may provide a productive method for tapping into the Group Mind*

## Meeting Expectations

### THE GROUP MIND

Client/server computing has made it easier for us to share files, annotate one another's documents and send E-mail. With some assembly required, we can talk to one another on the telephone while we work from the same PC-displayed file. Such is the limited state of most groupware today.

When we really need to collaborate, brainstorm, debate, persuade or reach consensus, we huddle into conference rooms where we are assisted only by white boards, paper pads, flip charts and our persuasion skills. Personalities color the best and the worst ideas, creative possibilities are lost in the heat of interaction, and consensus is reached too often out of fear of one's superiors, disgust with the process or biological imperatives. Meeting minutes reflect the writer's view.

Everyone complains about the hours wasted in meetings, yet the idea that such meetings must take place is rarely questioned. But a more interactive, creative and productive kind of meeting is possible. I call it a meeting of the Group Mind, and it is enabled by an enormously valuable emerging client/server application called meeting-support software or meetingware.

Meetingware is the only type of product offered by Tucson, Ariz.-based Ventana Corp., a spinoff of the University of Arizona's respected Center for the Management of Information. Ventana's latest product is GroupSystems V, which includes tools for voting, brainstorming, ranking and commenting on ideas, tabulating, displaying and

reporting. My favorite tool is Group Matrix, which, among other capabilities, enables each meeting participant to vote his or her level of agreement with a series of statements while it displays the consolidated result on a group display. Areas with considerable consensus appear in green; areas where there is substantial disagreement are in red. As participants vote or change their votes, the cen-

tral display is immediately updated. Groups can explore the areas of disagreement until a consensus emerges.

GroupSystems V runs on a Novell

LAN—part on the server, part on participants' PCs, all under the control of a moderator PC. A typical installation is in a meeting room with a dedicated LAN and PCs. But the product also supports remote interaction, asynchronous participation and meetings where participants sit at their desks instead of in a conference room.

## Case Study

### TRIAL BY MEETING

Recently I put GroupSystems V to a substantial real-world test. With Doug Vogel, co-founder of Ventana and an associate professor of MIS at the University of Arizona, I moderated a three-day meeting of 40 executives near Nice, France, on the subject of client/server. Participants from several countries, including CIOs, general managers, vendors and a sprinkling of gurus, were hosted by Don Coleman, president of Unisys Client/Server Systems in San Jose, Calif.

We designed the meeting around GroupSystems V. Each participant used a notebook

computer with a color display connected via PCMCIA LAN adapters to a Novell network in the meeting room. I moderated the discussion while Doug operated the GroupSystems V moderator station. Only one of the meeting participants had ever used the product before.

I have never seen so much information exchanged, discussed and created in so little time. Participants soon seemed to prefer working through the system, although there was always a balance of lively discussion.

The four areas that the group wanted to address were client/server's definition, economics, organizational impact and technology. In each of these areas, the group generated reams of opinions, discussion and votes. It selected a definition of client/server that included both a technical and a business perspective. The preferred technical description derived from the well-known Gartner Group definition, modified to encompass object orientation. The business perspective envisioned client/server as a strategy for rationally distributing computer resources according to business needs and integrating those resources using an enterprisewide perspective.

When asked why they were

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# FRONTLINE

implementing client/server in their companies, the participants' responses (expressed as votes over the system) were, in order, empowerment, reengineering and downsizing. Don Tapscott, author of *Paradigm Shift*, asked the participants what they thought was the biggest opportunity for the new technology. Their conclusion: to make fundamental changes in their businesses, especially in areas like competitiveness and customer service. Interestingly, when Tapscott asked group members what the primary business case was for IT investments in their companies, the answer was cost savings. Sad, but not too surprising.

The discussion on economics captured the group's opinion that client/server costs more than traditional computing and is less predictable because of the immaturity of the technology. Nonetheless, the reasons cited for moving to client/server are compelling, including organizational flexibility, business competitiveness and end-user demand.

Chris Seymour, director of group computing services at British Telecom, said his company's move to client/server actually increased the load on his mainframes (due to data-access requests) so much that he has substantially upped his budget for big iron. On the other hand, Bill Gramley, CIO of Bozell, Jacobs, Kenyon & Eckhardt, a \$1.5 billion advertising agency in Dallas, reported that his company's value delivery systems have been recreated around its NextStep client/server applications to such an extent

**Research indicates that managers spend from 30 to 80 percent of their time in meetings.**



that the only appropriate measure is the positive effect on the top line.

The technology discussion was a bit of a free-for-all, but GroupSystems V enabled the group to structure the information it generated. Participants were asked to make planning assumptions about the use of certain

technologies for the years 1994, 1997 and 2000. Participants entered 113 statements in less than 10 minutes. Typical statements were "Intel X86 architecture is the leading microprocessor," and "OS/2 is a good choice for clients in client/server systems."

Using a five-point scale, the group members expressed their level of agreement or disagreement with each statement for each time period. For example, the group strongly agreed that in 1994, Intel X86 architecture is the leading microprocessor; for the year 2000, the group only weakly agreed with that statement. The group opinion on the statement that OS/2 is a good choice for clients in client/server systems in 1994 was weak disagreement; the opinion for 2000 was even less enthusiastic. The group's results filled a book, and participants left

the meeting with a solid starting point for their technology-planning process.

There was much more depth and breadth given to the consideration of each subject at this gathering than would have been possible without GroupSystems V. Anonymity assured that the participants would advance their real opinions. The fact that all delegates could "talk" simultaneously assured that everyone got the chance to express their ideas and opinions. And since English was the second language for most of the participants, they were more comfortable interacting through reading and writing than through listening and speaking.

## *Interacting Lessons*

### **A NEW TOGETHERNESS**

This one experience has me sold on meetingware in general and GroupSystems V in particular. I believe meetingware is a valuable tool for both intracompany and intercompany meetings, and I expect it to become a commonplace application. I foresee ad hoc meetings where everyone brings a notebook computer with its own wireless LAN adapter, enabling gatherings in the cafeteria or any available meeting room.

Notebook computers with PCMCIA wireless LAN adapters will dramatically broaden the opportunity for meetingware. For GroupSystems V to seize this opportunity, Ventana must reimplement it in the image of a PC software product. The arcane DOS user interface detracts from GroupSystems V's functionality. In addition, the lack of a coherent framework for the rich toolset and the undocumented folklore necessary to use the product mean that the moderator learning curve is steep.

Nonetheless, I will continue the climb because the rewards are great. I think of today's GroupSystems V as a prototype of what is possible. Ventana will release the Windows version this year, hopefully with a revised pricing plan. Currently the entry price is \$25,000 for a 10-user system, discouraging casual experimentation. I hope to see an E-mail packaging and pricing strategy that would substantially broaden the market for what I believe is destined to become a commonplace application, whether it comes from Ventana or another opportunity-seeking software firm.

Meetingware enables capturing, documenting and even changing the Group Mind. Imagine the knowledge, creativity and productivity latent in the Group Mind of most companies. Staggering. Perhaps this is what collaboration really means. **CIO**

*Portia Isaacson is president of Dream IT Inc., a consultancy and publisher headquartered in Colorado Springs, Colo., dedicated to providing quality business information to customers and creators of frontline IT.*



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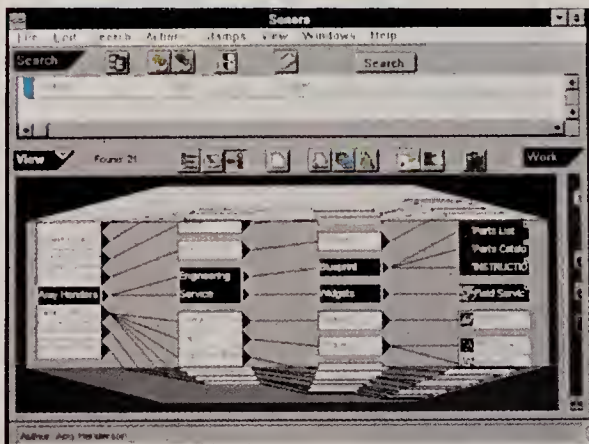
THE MAGAZINE FOR INFORMATION EXECUTIVES



## The Needle in the Haystack

Information is power—if you can find what you need. XSoft, a division of Xerox Corp., has introduced a document-management product that lets Novell NetWare-based workgroups find and use information immediately, even when they don't know exactly what they are looking for or where it is stored, according to the company.

With Visual Recall's advanced linguistic-comprehension techniques, users can perform sophisticated, multilingual index and search operations on the content of information files, regardless of their native application (word processor, spreadsheet, database). Individual or multiple documents can be indexed automatically with any number of preassigned properties, and users can customize, save and reuse search criteria.



viewed, printed or faxed without requiring the application in which it was created.

The system requires a 386 PC or higher, 8MB of RAM, 10MB of free disk space, Windows 3.1 and NetWare 3.X or higher. The suggested retail price is \$395. For more information, call 800 428-2995.

## Artistic Licensing

Imagine you had the ability to access whatever information you wanted via CD-ROM, broadcast or online services, but you only had to pay for what you used. The Wave System, a new information encryption, metering and accounting system and service, works with software-based asset-management systems to let users do just that. It consists of two features: the WaveMeter—a PC add-on board, chip or PCMCIA card that resides in a server or desktop computer—and the WaveNet transaction-processing network.

Wave Systems Corp. will encrypt information providers' data in whatever form they want to sell it: for instance, by article, page or paragraph. Users can review abstracts of articles or demos of software before buying the information. Once the consumer decides to make a purchase, WaveMeter checks

credit availability and then issues a decryption key. It records what was purchased and its price, and then uploads that information in batch mode to the network. (National Data Corp. provides automated phone transaction processing for Wave Systems.) Software vendors and information providers receive usage reports and payment and register new products through the network.

The WaveMeter is being manufactured under license by National Semiconductor Corp. and others. Wave Systems is creating alliances with various hardware vendors to include the product in their machines. It is also negotiating with numerous software publishers and information providers, which will modify their products to work with the technology and services. The company expects Wave-equipped PCs to be available this fall. For more information, call 800 928-3638.

## Macs Fax

The facts about faxes: They save time for recipients, who receive documents faster than by mail or courier. But for senders, faxing can be a frustrating time-gobbler.

With a standard fax machine, the process takes an average of five minutes, according to one survey. That includes printing the document, standing in line at the fax machine, setting up the transmission, redialing if busy, waiting for the document to feed and returning for the faxed pages.

But Global Village Communication Inc. of Mountain View, Calif., cuts the process to 20 seconds with OneWorld Fax, which the company claims is the first plug-and-play fax server for Macintosh workgroups.

The integrated hardware-software solution lets users fax from their desktops while running any application. Users simply select "fax" on a menu, enter a destination and click "send." The server handles multiple faxes simultaneously, automatically redialing busy numbers.

The self-contained server includes LocalTalk and Ethernet network connections, OneWorld PowerPort/Bronze II 9,600-bps fax/modems, Global Access server software, GlobalFax client software and OneWorld Manager administration software. Retail prices: \$999 for a one-line LocalTalk configuration; \$1,499 for the two-line LocalTalk



or Ethernet versions. Both accommodate 30 users. Additional licenses cost \$249 for 10 or \$999 for 50, with custom quotes available for up to 500. For information, call 800 736-4821.



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# To Catch a Thief

**Decision-support technology is helping this pharmacy chain detect and prevent the theft of millions of dollars' worth of prescription drugs**

**P**urloined prescriptions add up to big losses for pharmacy retailers, particularly when thefts go unprosecuted for lack of information. Point-of-sale (POS) systems can track store losses but not necessarily which items are disappearing or how totals of merchandise received by stores compare with totals ordered from warehouses. Eckerd Corp., a Clearwater, Fla.-based, 1,720-store retail pharmacy chain, needed a better weapon against drug losses: a system that could read sales data from pharmacy terminals and compare it with shipment data from warehouses and wholesalers.

Prescription drugs have a way of disappearing. Sometimes it's simple arithmetic. Eckerd stores order drug supplies via handheld terminals that dial up Eckerd warehouses or third-party wholesalers. But the counts shipped don't always correspond with the order, resulting in discrepancies in store- or warehouse-inventory totals. Other times, stock loss is the result of sticky-fingered employees.

Eckerd was a victim of both, and it had no way of telling which drugs were filched or even whether it was pharmacy stock that was missing. Inventory for the entire store was lumped together, inseparable for loss-reporting purposes. "We didn't know what portion of the store was causing the shrinkage," says Mickey Carter, Eckerd's director of loss prevention. "It could have been drugs, cosmetics, cigarettes or any-

thing." But even pharmacy-specific POS systems can't identify discrepancies in store orders and warehouse shipments, because they only track what goes out of the store, not what's ordered and received.

Another POS shortcoming: Data from the storewide system isn't fine enough to distinguish one medication from another or to identify losses due to expired product. But such details are vital to catching and prosecuting pharmacy theft.

A better approach was needed immediately, so Eckerd sought an outside solution. "Our IS people were very busy, and we needed to do this in the cheapest and fastest way possible," Carter says. He called in IBM Corp., which recommended the Data Interpretation System from its decision-support software subsidiary, Metaphor Inc. of Mountain View, Calif.

The Metaphor software resides on IBM workstations at headquarters, where it downloads all drug-related sales and shipment data from mainframe store and warehouse systems. Loss-prevention analysts use automated interpretation procedures to detect both shipping discrepancies and store theft. The system tracks each item sold by store and by National Drug Code number, the pharmacist's equivalent to the retail stock-keeping unit (SKU). It can distinguish between generic and branded medication, allowing Eckerd to more nar-

rowly categorize its losses.

Since the software went live in late 1992, it has identified more than \$1 million in lost-pharmacy product, more than offsetting the modest \$250,000 hardware/software investment. Eckerd has prosecuted 57 criminal cases and has another 50 pending, all against store associates, including pharmacists. Nearly three years of system data is archived on the mainframe, available for use in prosecuting cases.

Other benefits have been realized as well. Previously, stores couldn't cash in rebates unless the chain ordered directly from the manufacturer. Now purchases from third-party wholesalers can be submitted, too, because the system helps prove that sales of drugs sourced from wholesalers were actually sold. These rebates add another \$50,000 annually to the coffers.

The system also has limited application in relocating stagnant merchandise. "If a doctor writes a prescription for 12 pills but the item comes in a 100 count, that store will be stuck with 88 pills," Carter says. With the system, "we can identify that merchandise, find a store that needs it now and transfer the inventory within a couple of weeks."

—Richard Pastore

## VITAL STATISTICS

**Organization:** Eckerd Corp., a 1,720-store retail pharmacy chain based in Clearwater, Fla.

**Application:** Drug-loss-prevention system based on decision-support technology

**Technologies:** Data Interpretation System from Metaphor Inc. resides on four IBM PS/2 OS/2-based workstations, downloading store sales, shipping and inventory data from mainframe databases

**Scope:** A single loss-prevention analyst devoting five days per month can run reports and interpret the system's findings

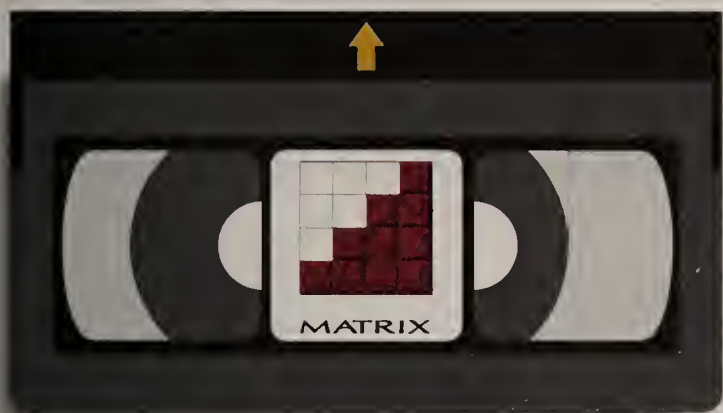
**Sponsor:** Loss Prevention Director Mickey Carter

**Objective:** To collect and report in fine detail all data from drug sales and shipping in order to identify and prosecute losses from theft

**Payoff:** Identified \$1 million in product losses due to theft, resulting in more than 100 court cases; also enabled savings from manufacturers' rebates and store-to-store inventory shifts



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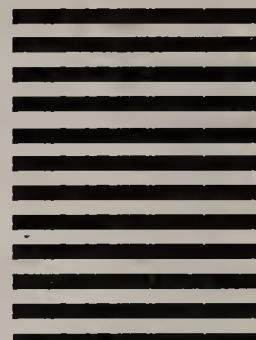
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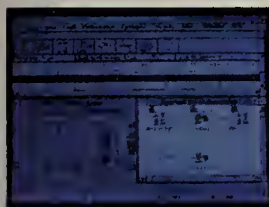


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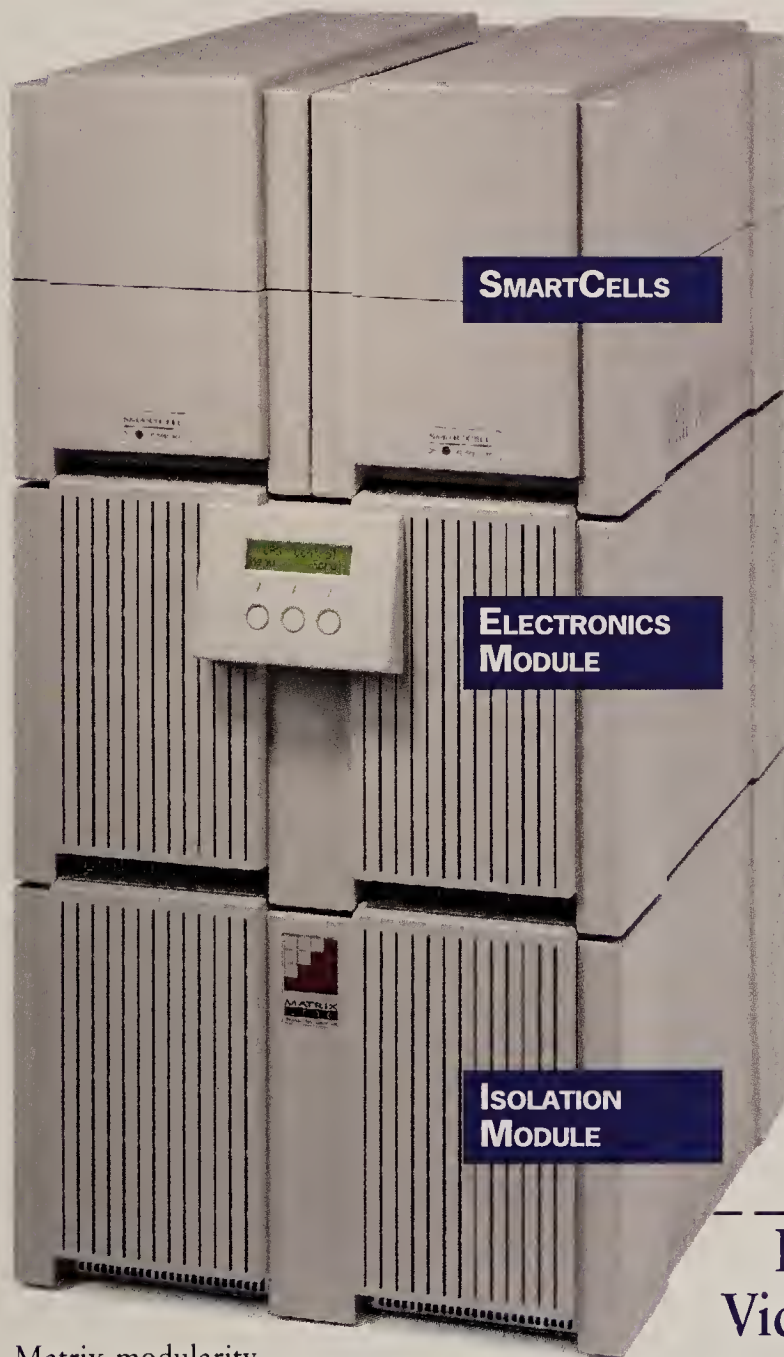
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No downtime. No service delays. No unnecessary risk. The fact is, Matrix delivers plug-and-play reliability no other UPS can match.

### Matrix modularity means low operating and lifecycle costs

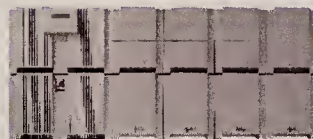
When you're rightsizing to conserve cash, the last thing you need is a UPS that wastes it.

*Small footprint and low weight (each module can be shipped overnight) means Matrix can be hot-swapped out by even untrained personnel without the cost or delays of a service call.*



3000 and 5000 VA protect up to 22 servers or 2 midrange systems

■ Hot-swappable modules for 100% uptime, 60% lower lifecycle costs



■ Microprocessor-controlled, zero-maintenance SmartCells end expensive service contracts. For more runtime, simply add SmartCells.

■ SNMP support and automatic server shutdown (for NetWare, UNIX, NT, OS/400, VAX, Sun and more) protects data, lowers LAN support costs.

■ Environmental and power monitoring provides "glass room" level security.

■ Two-year warranty, \$25,000 Lifetime Equipment Protection Guarantee (see details)

**Free  
Video!**



Simply fax us your business card and tell us which brand of UPS you currently use and your free Matrix UPS video will be sent straight away.

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"The new **Informix** database server architecture will put the vendor ahead of competitors **Oracle** and **Sybase** in support of multiprocessing systems."

David McGoveran, *Alternative Technologies*

# Parallel Database Technology That's As Dynamic As Your Organization.

Recently, Informix Software introduced Dynamic Scalable Architecture™, a next-generation database architecture designed to take advantage of parallel processing. The result is a technological breakthrough in client/server database performance and scalability. Informix's Dynamic Scalable Architecture will run on the entire range of new, high-performance open systems, from uniprocessors to symmetric multiprocessors, loosely coupled clusters, and massively parallel machines.

**John Morrell, International Data Corporation:**

"The Informix Dynamic Scalable Architecture has the potential to vault Informix past its primary competitors for high-end database processing functionality."

**Peter Kastner, Aberdeen Group:**

"Sybase and Oracle lack the clarity of Informix's architecture. They're going to have to go back to their labs."

**Rob Tholemeier, Meta Group:**

"Informix may have the best scalable server technology today... I think people are mistaken in not taking the time to really look at Informix."

**Gordon Kerr, Senior VP, Management Information Systems, Hyatt Hotels and Resorts:**

"What Informix has done with DSA is make it much easier for me to plan for the future. We're beginning to deploy symmetric multiprocessing hardware through our organization, and I know that if and when we determine we need to scale up to loosely coupled or MPP machines, our Informix applications will be able to make the move with us."

**Michael Bloomberg, Bloomberg Financial Markets:**

"Informix developed core internal parallelism in DSA, which is different than other types of add-on parallel database capabilities we've seen. Since the parallel processing features are internal, rather than external, we're expecting impressive performance gains. It's clear that Informix thought this technology through."

#### **Find Out Why DSA™ is So Different.**

We'd like to tell you more about Informix's Dynamic Scalable Architecture, including an independent report from the Aberdeen Group. **Send or call toll-free 1-800-688-IFMX, ext. 18 for your free copy.**

